HIV Risk Perception of Adult Asylum Seekers in Finland

Doris Babeh Puttonen Ebai

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Author:	Doris Babeh Puttonen Ebai
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Abstract:

Despite global efforts to fight against HIV/AIDS pandemic, the disease remains one of the leading causes of death in the world. In 2018, epidemiological statistics show approximately 37.9 million people were infected with HIV. This indicates the fight against HIV/AIDs is far from over, and there is still an urgent need to re-enforce HIV awareness, especially amongst vulnerable population groups like the asylum seekers. The components of the Health Belief Model (HBM) extensively explain HIV risk perceptions; thus, it is used as the theoretical framework. This study aims to understand the HIV risk perception and the needs for HIV prevention of adult asylum seekers living in Finland. Two research questions are raised to achieve this aim: what is the HIV risk perception of adult asylum seekers living in Finland, and what are their needs concerning HIV prevention? A mixed research design is used to investigate these research questions: a quantitative method for question 1 and qualitative methods for question 2. Convenience sampling was used for recruiting the participants. The quantitative data were collected using a 40-items self-administered paper-based questionnaire. Qualitative data collection was done through individual face-to-face interviews (8 items open-ended questions). Data analysis for the quantitative method was conducted by using SPSS Version 26, IBM. The qualitative data was analyzed and interpreted through content analysis. The results indicate a positive HIV risk perception and narrow dispersion from the median. HIV risk perception is correlated with knowledge on HIV and other independent variables like the participants level of education. Qualitative analysis revealed five categories of needs for HIV prevention: HIV education and information, preventive service needs, administrative interventions, personal needs and needs related to alleviate barriers of HIV prevention use. However, about half of the participants had not received HIV education in Finland, and most of them had not used any HIV preventive care services offered at the reception centre. It was concluded that the results from the quantitative research reflected the findings from the qualitative research. HIV risk perception is a vital aspect which needs to be understood by private and public institutions in charge of creating HIV interventions for asylum seekers. This study recommends more research to investigate factors influencing risk perception of asylum seekers and how it can be improved towards positive change in preventive actions and use of HIV intervention services.

Keywords:	HIV/AIDS prevention, HIV Risk Perception, HIV Knowledge, Asylum Seekers
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Tiivistelmä:

Huolimatta maailmanlaajuisesta työstä HIV/AIDS pandemiaa vastaan, tauti on edelleen yksi merkittävimmistä kuolemaan johtavista sairauksista. Vuonna 2018, epidemiologisten tilastojen mukaan HIV tartunnan sai noin 37.9 miljoonaa ihmistä. Tämä kertoo siitä, että HIV:n/AIDS:n vastainen taistelu on täysin kesken ja HIV tietoisuuden vahvistamiselle on pikainen tarve, erityisesti haavoittuvan väestön, esimerkiksi turvapaikanhakijoiden keskuudessa. HBM-malli selvittää kattavasti käsitystä HIV:n riskeistä ja siksi sitä käytetäänkin tässä teoreettisena viitekehyksenä. Tämän tutkimuksen tavoitteena on selvittää Suomessa asuvien turvapaikanhakijoiden käsitystä HIV:n riskeistä ja tarpeista HIV:n ehkäisyyn. Tavoitteen saavuttamiseksi esitettiin kaksi kysymystä: mikä on Suomessa asuvien turvapaikanhakijoiden käsitys HIV:sta ja mitkä ovat heidän tarpeensa HIV:n ehkäisyssä? Vastauksia arvioidaan monimenetelmätutkimuksella: vastauksia kysymykseen 1 arvioidaan kvantitatiivisella menetelmällä ja kvalitatiivisella menetelmällä kysymykseen 2. Tutkimukseen osallistuvien henkilöiden rekrytointiin käytettiin mukavuusotosta. Kvantitatiivisen datan keräämiseen käytettiin 40 kysymystä sisältävää paperista kyselylomaketta ja kvalitatiivinen data kerättiin henkilökohtaisten haastattelujen avulla (8 avointa kysymystä). Kvantitatiivinen data analysoitiin tilastotieteen laskentaohjelmalla SPSS Versio 26, IBM. Kvalitatiivisen datan analysointiin ja tulkintaan käytettiin vertailuanalyysiä. Tulokset osoittavat positiivisen käsityksen HIV riskeistä sekä kapean hajonnan mediaanista. Käsitys HIV:n riskeistä on verrannollinen HIV tiedon ja muiden riippumattomien muuttujien, kuten esimerkiksi koulutustason kanssa. Kvalitatiivinen analyysi osoitti, että HIV:n ehkäisyyn on tarvetta viidessä eri kategoriassa: kouluttaminen ja tiedottaminen, ehkäisypalvelujen tarve, hallinnolliset seikat henkilökohtaiset tarpeet sekä tarpeet joilla kynnystä HIV ehkäisyn aloittamiseen saadaan madallettua. Noin puolet tutkimukseen osallistuneista ei kuitenkaan ollut saanut HIV koulutusta Suomessa ja suurin osa ei ollut käyttänyt vastaanottokeskuksen tarjoamia HIV:n ehkäisypalveluja. Johtopäätöksenä todettiin, että kvantitatiivisen tutkimuksen tulokset olivat linjassa valitatiivisen tutkimuksen kanssa. Laadittaessa HIV ohjeistuksia turvapaikanhakijoille, on sekä yksityisten että julkisten instituutioiden ymmärrettävä, kuinka tärkeää on olla tietoinen HIV:n riskeistä. Tämän tutkimuksen perusteella tarvitaan lisää tietoa, jotta saadaan selvitettyä turvapaikanhakijoiden tietoisuuteen vaikuttavia seikkoja sekä parannettua HIV ehkäisypalvelujen ja ohjeistusten käyttöä.

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Helsinki, May 2020 Doris Babeh, Puttonen Ebai

1 INTRODUCTION

Recently, the number of migrants to European countries has increased due to various reasons, such as natural disasters, political crisis, poverty, and a search for better life. In 2017, Finland received about 343 582 international migrants, constituting almost 6.2% of the total population. About 8.8% (30 133 people) of these migrants were refugees and asylum seekers (WHO European Region report 2018 p.10). Most of the European Union (EU) member states face challenges in providing healthcare to their citizens through the prevention, control, and surveillance of cross-border diseases (air, water, food, or blood-borne diseases). The spread of HIV is considered one of the major public health problems in Europe based on statistical information which shows an accumulative number of HIV diagnosed cases. In 2010, about 27 116 new cases of the HIV infection occurred in 28 European Union and European Economic Area (EU/EEA) countries, and this number had increased to 29 444 people over 31 countries in 2016 (Alvarez-del Arco et al. 2013; ECDC/WHO Regional Office for Europe 2017).

Studies indicate that the majority of all HIV/AIDS infection cases in the EU/EEA lies within migrant population group. These studies also show that migrants are the most vulnerable population group at high risk of infectious diseases owing to factors such as high prevalence rates of these diseases in their countries of origin (Alvarez-del Arco et al. 2013 p. 139; Tiittala et al. 2018a p. 1). Moreover, other studies such as Fakoya et al. (2015 p.1), suggested that even though the acquisition of HIV infections for migrants is believed to have predominantly occurred in their home countries, many HIV cases occurred post-migration. The reason for this problem is that, even though most EU countries provide screening for asylum seekers and refugees, these countries do not offer services in healthcare guidance, or HIV/sexually transmitted diseases counselling, prevention, and control. Such a lack of health care services is one of the contributing factors for post-migration HIV infections among this population group (Fakoya et al. 2015).

To mitigate this problem, the European Centre for Disease Prevention and Control (ECDC) created HIV screening and testing guidelines/ recommendations in 2010 for all migrants (especially asylum seekers and refugees) coming into EU and European Free Trade Association (EFTA) zones. These guidelines recommend the EU member states to

offer HIV/AIDS-related healthcare services to migrants. These HIV prevention services should go beyond HIV- testing and screening to prevent the spread of HIV/AIDS in Europe effectively. According to these guidelines, HIV screening measures should include other preventive services like education, guidance and counselling, treatment (antiretroviral drugs), and the surveillance of the HIV risk factors among migrant population (Alvarez-del Arco et al. 2013 p. 143). Finland, as part of the EU, has incorporated these guidelines into the healthcare system for the asylum seekers. There is a high level of preparedness/awareness for prevention of infectious diseases in Finland, and it is evident that the quality of healthcare services and programs are promoting the well-being of asylum seekers and refugees in Finland (Tiittala et al. 2018a).

Notwithstanding these positive aspects of asylum seekers healthcare in Finland, there are relatively very few studies which have been conducted in Finland to investigate issues relating to asylum seekers' knowledge, risk perceptions, beliefs, or misconceptions pertaining to HIV/AIDS. One of the recent studies by Tiittala et al. (2018c) showed there are some significant gaps in the knowledge of HIV among young asylum seekers compared to those of general public. Assessing knowledge on HIV is an important aspect of HIV prevention research as studies affirm that the lack of knowledge on HIV/AIDS increases vulnerability to the infection (Tiittala et al. 2018c; Oglesby & Alemagno 2013).

HIV/AIDS is a major global health challenge, and pandemic remains one of the leading causes of death in the world (Tafazoli et al. 2016 p.582). This study seeks to re-enforce HIV risk awareness among adult asylum seekers and to promote the optimal use of HIV preventive measures within this population. It also provides the information needed for the creation of HIV/AIDS preventive and interventional programs that are culturally and religiously appropriate for asylum seekers in Finland. Therefore, this thesis project aims to understand the HIV risk perception of adult asylum seekers living in Finland and to identify their needs concerning HIV prevention.

2 THEORETICAL BACKGROUND

This chapter comprises of an overview of HIV/AIDS (origin, transmission, diagnosis, treatment and management); definition of the target group; provision of healthcare services for asylum seekers in Finland; the theoretical framework; and a short review of asylum seeker's vulnerability to HIV infections based on previous literature.

2.1 Overview of HIV/AIDS

Human Immunodeficiency Virus (HIV) is the virus that causes the Acquired Immune Deficiency Syndrome (AIDS). According to the Centre for Disease Control (CDC), HIV originated from monkeys in the late 1800s. During this time, people hunted a type of chimpanzee found in Central Africa for meat and became cross-contaminated with chimpanzees infected blood. The earliest cases of the disease were reported in West Africa in the mid-1900s. Since then, the virus has slowly spread across Africa into other parts of the world (CDC 2018).

HIV can be transmitted from an infected person (carrier) to a healthy person through an exchange of HIV contaminated body fluids such as blood, pre-seminal fluids and semen fluids, rectal fluids, vaginal fluids, and breast milk. In order for HIV infection or transmission to occur, body fluids from an infected person must come through the mucous membrane or damaged tissues or must be directly infused into the bloodstream. When the virus enters the body of a healthy person, it attacks the white blood cells (T-helper cells, also known as the CD4 cells) in the immune system. Once inside the CD4 (Cluster of Differentiation 4) cells, the virus replicates and gradually destroys them. This process weakens the immune system and the person will be more exposed to other infections (NIDA 2012; AIDS info 2018; WHO 2019).

There are three stages of HIV infection: acute HIV infection, chronic HIV infection, and the AIDS stage. The first stage occurs two (2) to four (4) weeks after exposure typically with flu-like symptoms. If the infected person does not start taking antiretroviral treatment early enough, the disease may progress rapidly to the second stage (chronic HIV stage). During the chronic HIV stage, the virus continues to multiply. The rate of the viral progression depends on factors such as person's age, pre-existing medical conditions,

genetical composition or general health situation. The second stage of HIV is also known as the asymptomatic stage because the signs of HIV infections may be dormant for many years. Untreated HIV infection may sometimes take less than ten years to advance to AIDS, but there are significant interpersonal variations. However, it is important to state that HIV transmission is possible at any stage of the HIV infection cycle, and the virus cannot be eliminated from the body through any type of medical therapy. However, antiretroviral drugs (also known as antiretroviral therapy or ART) can only slow down the disease progression and hence, reduce the symptoms of the disease (NIDA 2012; WHO 2019).

The common routes of HIV transmission are through sexual intercourse with an infected person or mother- to- child transmission (during pregnancy, childbirth, breastfeeding) or through sharing of sharp objects with an infected person, and transfusion of HIV contaminated blood. HIV is not transmitted through shaking of hands, hugging or touching objects (eating utensils, toilet seats or doorknobs) used by an infected person. Blood-sucking insects such as mosquitoes or ticks are incapable of spreading HIV (AIDS info 2018; WHO 2019).

The symptoms of HIV are non-specific (sore throat, headaches, fever) and are similar to those of many other infections. Therefore, HIV diagnosing is not a straightforward procedure. A blood test is the most common and efficient method of diagnosing HIV. There are three types of HIV diagnostic tests: virologic testing (nuclei acid test), antigens detection and antibody test (ELISA test), and antibody detection. It is important to state that HIV testing, and screening are considered as the first step to HIV prevention, treatment, care, and other support services (WHO 2019; WHO 2019b).

Implementation of HIV prevention measures is an essential aspect in the fight against HIV/AIDS. The most effective strategy for HIV prevention includes abstinence (not having sex), using condoms regularly and correctly during sexual intercourse, having only one sexual partner at a time, not sharing needles or sharp objects. The use of HIV prevention medicine such as pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) are widely recommended preventive methods. These drugs are usually used for people living with HIV who are trying to get pregnant or during gestation. There is

currently no universally approved vaccine against HIV or medication(s) to completely cure the disease (AIDS info 2018; WHO 2019).

2.2 Definition of Asylum Seekers

In Tiittala et al. (2018a), an asylum seeker was defined as a person who is seeking international protection from a foreign country and is still waiting for the decision on his/her application for refugee status. Thus, an asylum seeker becomes a refugee when his/her claims for refugee status has been assessed and accepted as legitimate by the receiving country (Refugees Council of Australia 2016; MSAH n.d.). Asylum seekers in Finland are mostly from Afghanistan, Iraq, Somalia, and the Syrian Arab Republic. For example, in 2016, Finland received 5 651 asylum seekers, significantly smaller number compared to 32 476 asylum seekers in 2015 (WHO European Region report 2018 p.10).

A refugee is also different from an asylum seeker. According to the Refugee Convention, a refugee is:

> any person who owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his/her nationality and is unable, or owing to such fear, is unwilling to avail himself/herself of the protection of that country (Refugees Council of Australia 2016).

The terms refugees, asylum seekers and migrants even though used interchangeably, have different meanings according to International Humanitarian Law. An immigrant refers to any person who for economic, social, emotional, or other reasons, wilfully decides to leave their country of origin to acquire a residence in another country. The difference between an immigrant and a refugee is that the former is free to travel to another country with their personal belongings and may return to their home country whenever they wish. However, a refugee is obligated by the incidence or risk of violence, prosecution or death to seek shelter in another country and can only go back to his or her country of origin when the reason for their displacement has been resolved or improved. In Finland, the largest group of refugees and the immigrant population are from the Russian Federation (approximately 70 000), followed by Estonia (around 45 000) and Somalia, Iraq and China (about 10 000 each) (WHO European Region report 2018 p.10).

2.3 Healthcare for Asylum Seekers in Finland

Finland, as part of the European Union, has developed practices and guidelines for the provision of healthcare for immigrants, asylum seekers and refugee population. Asylum seekers have the right to shelter at reception centres which are responsible for the social and healthcare. Finnish Immigration Service (Migri) oversees the organization of reception centres as well as provide operational guidelines (MSAH n.d.). One common practice of guidelines is voluntary health assessment for asylum seekers which focuses on screening for infectious diseases. The management of infectious disease control falls under the jurisdiction of all 311 municipalities in Finland as well as six regional state administrative agencies and 20 district hospitals. Meanwhile, the Ministry of Social Affairs and Health (MSAH), known in Finnish as 'Sosiaali- ja Terveysministeriö' is responsible for the management of all public health entities (Tiittala et al. 2018b p.2).

National Institute for Health and Welfare in collaboration with the Finnish Immigration Service launched the TERTTU project (Developing the Health Examination Protocol for Asylum Seekers in Finland: a national development project 2017–2019). This project aims to improve through evidence-based development, the current national health examination system towards a standardized protocol. It promotes health surveillance of asylum seekers in Finland through systematic data collection, especially for children and other vulnerable population groups as soon as they arrive in Finland. Such health care policies have resulted in improved health record system and increased knowledge and understanding of relevant health concerns and needs of asylum seekers at local, regional, and national level. According to research evidence, health monitoring helps to identify the needs of asylum seekers in the early stages and facilitates the provision of tailored support. European Region recognises that it is cost-effective for the government of a country to provide HIV prevention and control interventions which target the needs of the population (WHO European Region report 2018 p.10; THL 2020).

2.4 Health Belief Model

Risk perceptions are central to many health behavioural theories, and many models have been developed to predict health behaviours of people (for example, the Health Belief Model and the Item Response Theory) (Napper, Fisher & Reynolds 2012). However, the theoretical framework chosen for this thesis is the Health Belief Model (HBM). Rationale for choosing this theory is that the components of HBM extensively explains HIV risk perceptions. Another reason for choosing the HBM as the theoretical base of this thesis is that even though, the HBM is considered as a humanistic (qualitative) "theory", it can also be used as the theoretical framework for quantitative research. The HBM as stated in Tarkang & Zotor was also "[…] developed from the logical positivist paradigm of science; it stands out among the social-psychological models of health-related behaviours and is a value expectancy model developed to explain an individual's health actions under conditions of uncertainty" (2015).

Risk perception is defined as: "the beliefs about potential harm or the possibility of a loss. It is a subjective judgment that people make about the characteristics and severity of a risk" (Darker 2013). Perceived risk entails evaluations of the probability as well as the consequences of an uncertain outcome. There are three dimensions of perceived risk: perceived likelihood (the probability that a hazard will harm a person), perceived susceptibility (an individual's vulnerability to a hazard), and lastly perceived severity (the extent of harm which a particular risk behaviour would cause) (Darker 2013).

Recently, HBM is one of the most widely used conceptual frameworks for understanding the health behaviours of people. The HBM was developed in the United States in the early 1950s by a group of public health service social psychologists who wanted to investigate why only a few people were participating in programs to prevent or detect diseases. HBM was updated in the 1980s, and it has been very successful in promoting positive health-related actions such as the use of condoms, using seat belts and helmets, respecting traffic signals, compliance to medical prevention /treatment (immunisation) and many other behaviours (ReCAPP 2019; Boskey 2019; LaMorte 2018).

HBM is one of the popular behavioural models applied in nursing, especially focusing on preventive health care practices and patient's compliance in treatment therapies. It is important to note that HBM is based on the assumption that a person will take health-related

action under three circumstances. First, when they feel there is a harmful health condition which can be avoided if a certain action is taken (use a condom to prevent HIV). Secondly, when they have a positive expectation that taking health-related action will prevent them from getting an adverse health condition (use a condom to prevent HIV infection, which leads to AIDS). And third, when they believe that they can successfully take health-related action (for example, practising abstinence or using condoms regularly without any discomfort or unpleasantness). Thus, the model hypothesises that health-seeking behaviour of a person is influenced by their perception of a danger posed by a health problem, and the value associated with actions aimed at reducing the danger (ReCAPP 2019; Boskey 2019; Kabiru et al. 2011).

HBM focuses on the theory that a person's willingness to change his or her health behaviour is primarily due to six factors which represent the main concepts of this model. These concepts are namely: perceived susceptibility (risk), perceived severity, perceived benefits, perceived costs, motivation, and lastly self-efficacy. Perceived susceptibility means people will not change their health behaviours unless they believe that they are at risk (LaMorte 2018). For example, a person who does not think that they are at risk of contracting HIV from unprotected sexual intercourse is unlikely to use a condom. Perceived severity implies the probability that a person will change the health behaviours to avoid a consequence, and it depends on the seriousness of the consequence (ReCAPP 2019; Boskey 2019).

Perceived benefit means a person do not want to give up something they enjoy if they do not also get something in return. For example, it is challenging to convince couples to practice safe sex if they cannot see the benefit into their sex life. Perceived cost refers to the reasons why a person would not want to change the health behaviour because it is difficult or can result in additional cost. For example, a person who believes that condoms are a sign of distrust in a relationship may be hesitant to bring up the idea of using a condom with a partner (ReCAPP 2019; Boskey 2019).

Motivation is one of the essential aspects affecting risk perception, as explained by HBM. It implies that avoiding a negative health consequence is the main reason for a person to change health behaviour. A person's motivation to make a positive health action must only stem from the fear of an adverse condition that may result from them acting

otherwise (LaMorte 2018). For example, a person may start to eat healthy and exercise regularly (positive actions) because they want to look good and feel better about themselves. However, this type of motivation does not fall under the HBM because the person is not motivated by any adverse health outcome even though these actions would be beneficial. There must be a perceived threat (for example, of a heart attack or type two diabetes) which motivates the person into exercising and eating healthy (Boskey 2019).

Self-efficacy is an element which was added to the model in 1988. It looks at person's belief in his/her ability to make health-related changes. It also suggests that specific cues (indications), such as environmental factors can impact health-related actions. These cues can be internal or external, ranging from experiencing symptoms of an illness, to exposure to health promotion campaigns (Boskey 2019). HIV risk perception is a complex multifactorial concept which is founded on an individual's experience of life, and it is usually directly or indirectly influenced by cultural, political, and socio-economic factors. Studies have indicated that high perceived risk is a predictor of risky behaviours which increases vulnerability for HIV/AIDS. Thus, there is a need for the government to continuously monitor the risk perception of different population groups (Tafazoli et al. 2016 p. 583). The figure below shows HIV risk perception as described by the HBM.

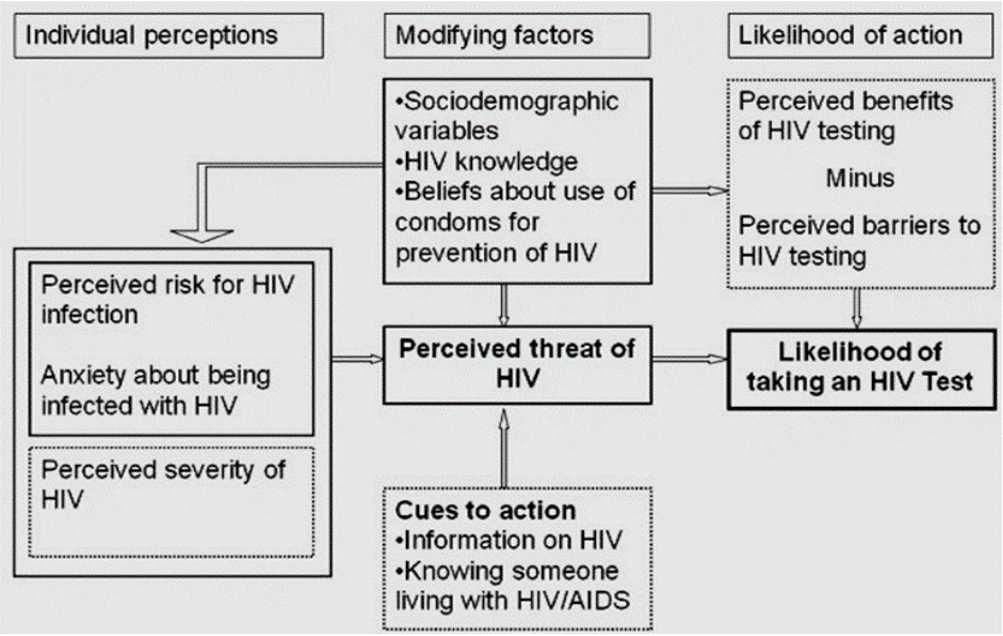

Figure 1. HIV risk perception according to the Health Belief Model (Kabiru et al. 2011)

2.5 Asylum seeker's vulnerability to HIV infection

Many studies have been conducted on HIV infection among migrants, but very few have examined the HIV risk perception of asylum seekers. One recent study (Tiittala et al. .2018c) conducted in Finland on young asylum seekers revealed there is a lack of sufficient knowledge on HIV which may cause vulnerability to the disease. The study concluded that health education concerning the knowledge, attitudes, practices might be a barrier to HIV testing. Researchers in this study found that it is important for the methods of delivering HIV to be culturally relevant for the asylum seekers.

Another study used as previous literature background for this work is by Tangmunkongvorakul et al. (2017), on the sexual behaviour, the lifestyles, relationships, and experiences of young migrant workers in the Chiang Mai region in Thailand. This study confirms that 'knowledge, attitudes, and experience using condoms and contraception' were important aspects of HIV prevention among the migrant population. One reason or barrier to the use of protection like condoms was because they had never seen or used a condom before. This type of thinking was due to cultural misconceptions and the dynamics of trust between sex partners. Barriers to the use of preventive services also resulted from the fact that some of the participants were unaware of their rights to receive healthcare services. Therefore, they did not attempt to seek for support, especially when necessary documentation for legal residency was missing.

Another background literature for this thesis is by Fakoya et al. (2015). This study was based on the post-migration acquisition of HIV among migrants in Europe and provided evidence of on-going post-migration HIV acquisition of migrants after they have moved to the EU/EEA. The findings of this study indicate that in Norway, about 14 % of 152 migrants diagnosed with HIV in 2011 acquired the infection post-migration. Given this evidence of post-migration HIV acquisition amongst this population group in some EU countries, there is a need for increased awareness among policymakers about HIV prevention needs of migrants from countries with HIV/AIDS epidemic. In addition, resources should be generated to improve the primary prevention programs directed towards meeting the specific needs of various migrant communities (Fakoya et al. 2015).

Research by Tsui et al. (2012) forms a basis of background literature or this thesis. Tsui et al. investigated if HIV risk perception is associated with positive or negative behaviours. The study indicated that HIV risk perception is an essential part of HIV/AIDS research. In Napper, Fisher & Reynolds (2012), HIV risk perception was considered to be an integral aspect of HIV/AIDS prevention. The study also confirmed that HIV risk perception is an essential element in evaluating how people see the risk of contracting a disease is the most important threat. The study also aimed to develop methods combining different approaches to evaluate HIV risk perception. These measures were likelihood and intuitive feelings (perceived risk susceptibility). All the studies mentioned in this section constitute the background literature for this thesis.

3 AIM AND RESEARCH QUESTIONS

This thesis aims to understand the HIV risk perception and the needs for HIV prevention of adult asylum seekers living in Finland. The questions guiding this research are:

1. What is the HIV risk perception of adult asylum seekers living in Finland?
2. What are their needs concerning HIV/AIDS prevention?

The objective of this study is to re-enforce the focus on HIV/AIDS risk awareness and to promote the optimal use of HIV/AIDS preventive measures by adult asylum seekers. This thesis also intends to add to the limited evidence-based knowledge on the HIV risk perceptions and HIV prevention needs of asylum seekers in Finland.

This thesis project was commissioned by reception centre X in Finland, and it seeks to provide information to be used by the reception centre for creating programs and services geared towards HIV prevention. Evidence from scientific research shows that HIV prevention interventions designed to meet the needs of a specific population group are more likely to be used by the target population, hence, being an effective method of prevention of HIV/AIDS infections and transmissions. Thus, it would be cost-efficient for the reception centres to provide HIV prevention and control interventions which target the needs of their residents (WHO European Region report 2018 p.10).

4 METHOD OF DATA COLLECTION AND ANALYSIS

The methodology used to investigate the research questions is a mixed method of both qualitative and quantitative research (individual face-to-face interviews and survey questionnaire, respectively). As stated in Boswell & Cannon (2015 p. 148), a mixed research method combines both qualitative and quantitative research for data collection, analysis, and interpretation. This method is considered the most appropriate for this thesis as it investigates the asylum seekers relevant experiences and awareness towards the risk of HIV infections in Finland. It also seeks to evaluate their individual needs concerning HIV prevention. Risk perception and needs assessment are aspects which cannot be quantified in numerical terms. Thus, by using a mixed-method, the researcher was able to validate the results or findings and gain an in-depth understanding of the research questions. Additionally, use of mixed-method improves the rigour of research because it counterbalances the possible weaknesses of using only a qualitative or quantitative method (Boswell & Cannon 2015 pp. 148-149).

The mixed-method design used here is the Sequential Explanatory Design. This type of research design requires the researcher first to collect and analyse the quantitative data, and later for the qualitative data. To this effect, the data to assess the participant's HIV risk perceptions (research question 1) was collected using a quantitative survey questionnaire. After the quantitative research was completed, the researcher recruited participants for the in-depth face-to-face interview to investigate participant’s needs vis-à-vis HIV prevention (presented by research question 2- qualitative method) (Pilot & Beck 2018 p. 215). The flow chart (see figure 2) below demonstrates the research processes for both the quantitative and qualitative research design.

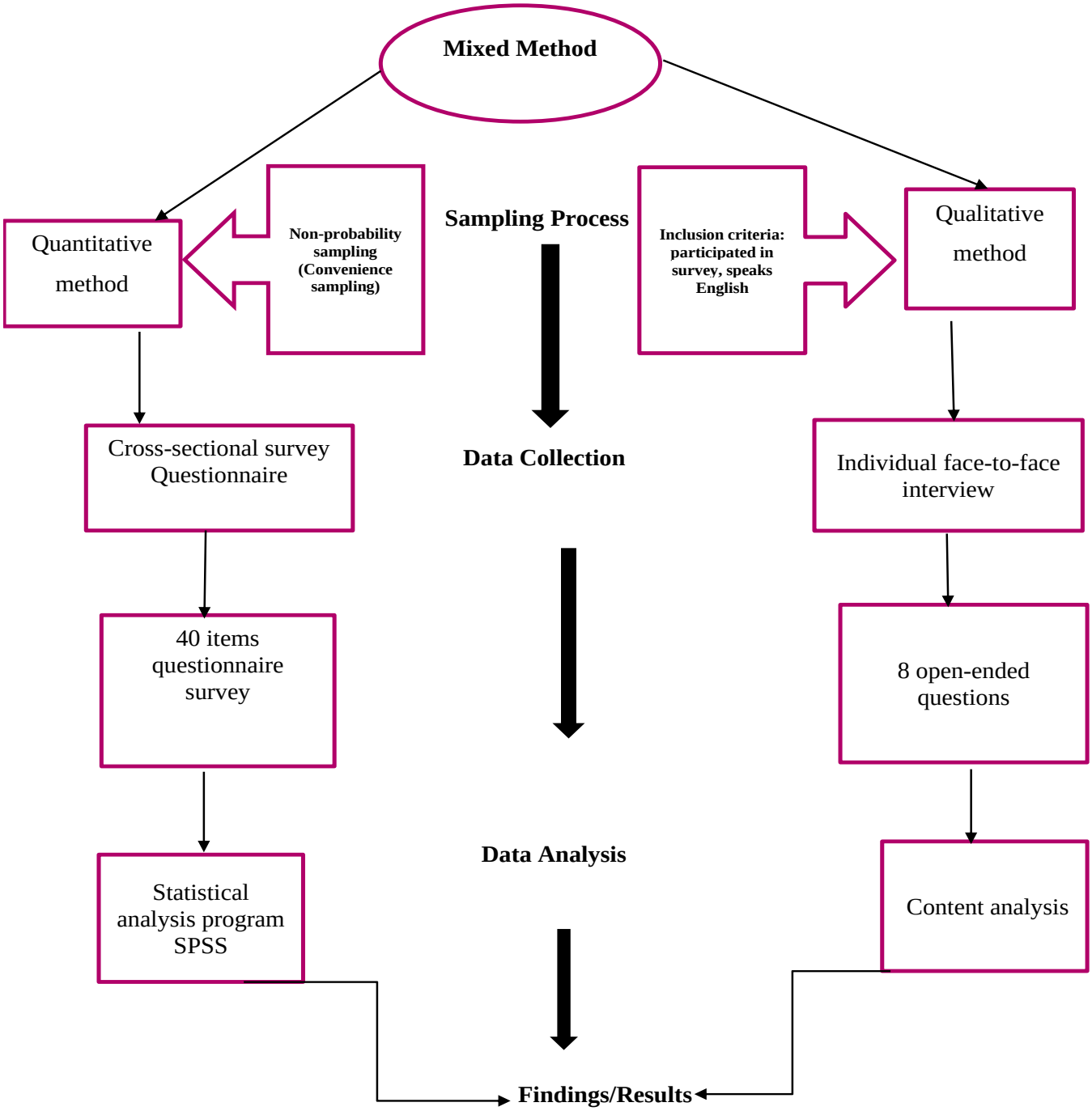

*Figure 2: Flow chart of the **research process***

4.1 Sampling process

After the research application was approved, a meeting between the researcher and the staff of the reception centre was held. The thesis aims and objectives were presented, as well as the research questions. The team gave valuable feedback on the preliminary questionnaire, and changes were made based on the feedback received. Recruitment of participants started with the distribution of the study posters about a week before the start of the data collection. A collection box was used for storing the questionnaires.

To maintain the privacy of the participants, only the researcher had access to the collection box. The data was collected on six days over a period of five weeks (August to September 2019). The potential participants were informed about the research aim and were directed to read the information provided on page 1 of the survey questionnaire. If the participant decided to answer the questionnaire, they were asked to validate this by answering "Yes" to the first question of the survey relating to consent. Participation was voluntary, and all who participated gave their informed consent. Failure in providing the consent led to rejection and exclusion of the survey questionnaires from analysis (a total of three surveys were rejected on this ground). For the qualitative data collection, participants were informed about the face-to-face interview, and some gave their verbal consent. However, it was challenging to confirm appointments based on the participant's schedules. Given this situation, the participants for the qualitative study were recruited on the day of the interview.

4.1.1 Sampling for quantitative method

For the quantitative approach, participants were recruited using a non-probability sample strategy, specifically the convenience sampling. The reason for choosing convenience sampling was because it is a process of selecting subjects to a study based on their availability. Availability of participants resulted from the fact that they were a specific group of people living in a specific location (in this case asylum seekers at a reception centre) (Boswell & Cannon 2015 p. 286; Pilot & Beck 2018 p. 163). The criteria for inclusion was the ability to read and understand any of the survey questionnaire languages (English, Finnish, Arabic, Somali, and Dari). A total number of 118 responses were accepted as data material for the quantitative method.

As earlier mentioned, the participants were provided with a brief description of the aim and objectives of the thesis. The time allocated for the completion of this survey was 20 minutes, and the participants were encouraged to answer all the questions. However, the participants were free to take as much time as needed. The participants were also informed about the possibility to stop or discontinue their participation at any time (See Appendix 1). Answers to part 2 (based on assessing knowledge on HIV) were provided to the participants after completion of the survey. It presented an opportunity for the researcher to educate the participants on HIV infections and preventive measures.

Furthermore, the researcher had the opportunity to provide HIV/ AIDS and safe sex education to some of the participants. Some participants showed great interest in getting more information about HIV testing and those participants were referred to HIVPOINT (contact information and address were provided).

4.1.2 Sampling for qualitative method

The recruitment criteria of participants for the individual interviews were participation in the survey and at least satisfactory English communication skills. The goal was to reach a data saturation point: a point where the researcher does not determine in advance the number of respondents to be recruited at the beginning of the study but only stop recruiting participants when no new information emerges. Based on these criteria, six respondents gave their written consent to participate in the interview (See Appendix 3: consent form). Face-to-face interviews were held from the 21st to 22nd of September 2019 at the reception centre X and were conducted in a private room with only the researcher and one participant present at a time. At the beginning of the interview session, the interview process was explained and written consent was obtained. The participants were encouraged to speak freely and they were informed about the venue of the interview. In addition, the researcher informed participants about the data collection instrument, which included a voice recorder and a mobile phone to tape the conversation. Verbal consent for recording was obtained from all the participants. At the end of the interview, the participants were encouraged to ask any questions relating to the research. The interview sessions lasted for

approximately 20-45minutes. Researcher's contact information was also provided to the participants for more information about the study.

4.2 Data collection

The quantitative data of the study was collected through a self-administered paper-based survey while the qualitative data was obtained from face-to-face interviews.

4.2.1 Data collection for quantitative method

Quantitative data collection was done by using a cross-sectional survey questionnaire with both closed-ended and semi closed-ended questions. In a cross-sectional survey, the data collected on independent and outcome variables were received at the same time (Pilot & Beck 2018 p. 149). The questionnaire used seeks to provide information to the first research question (what are the HIV risk perceptions of adult asylum seekers living in Finland?). The respondents were expected to read the questions, interpret them, and select the right answers based exclusively on their own opinion (Kumar 2011 p. 145).

The survey questionnaire was self-designed and included forty (40) items. The questionnaire was adopted from HIV risk perception survey questionnaires like the HIV-KQ AG by Volpe et al. (2007) and from other studies like Napper, Fisher & Reynolds (2012) and Singh & Saini (2016). The researcher changed words/phrases to match the aim of the study and ensured that the language used in the questionnaire was appropriate to the participants' culture and religion.

4.2.2 Data collection for qualitative method

Research question 2 "what are the needs of adult asylum seekers relating to HIV prevention?" was investigated using face-to-face interview. For the qualitative part, eight (8) item pre-determined open-ended questions were presented (Gerrish & Lathlean 2015 p. 391). The interviewer sometimes used probes to explain the questions and helped the participants to understand them. This technique is allowed and recommended in

qualitative data collection (Nieswiadomy &Bailey 2018 pp.211-212: Jansen 2010). Eight (8) interview questions are presented in Appendix 2.

The decision to use individual face-to-face interviews was made based on the nature of the topic. The researcher felt that other types of interviews (for example, a group interview), could discourage openness and hamper the participant's ability to discuss and freely share their experiences. The face-to-face interview offers a better opportunity to obtain accurate and more personal information from all the participants, which is vital in understanding the research problem. Face-to-face interviews are also the most convenient method of data collection, especially when there is only one interviewer. This type of interview makes it easy for the researcher to have control over each participant, and to keep them focused during the discussion (DeFranzo 2014; Jansen 2010).

The interview session started with researcher thanking the participants for coming and informing them on the interview process. Basic information about the purpose of the study and the length of the interview was provided. Informed consent was obtained from all the participants before the start of the interview. The researcher also discussed anonymity and confidentiality issues and ensured that the participants were aware and verbally consented to recording of the interviews (using a digital recorder and mobile phone) to facilitate the transcription of information and to confirm that no useful information was omitted.

The pre-determined open-ended questions were provided to the participants on paper before the start of the interview. One question was asked at a time (in a chronological order 1 to 8), and each participant was given an equal amount of time to answer the questions. Researcher, in this case, also acted as a mediator (guiding the participants to help stay on track). The researcher followed the guidelines on the interview provided in Nieswiadomy & Bailey (2018 p.213) and Gerrish & Lathlean (2015 pp. 393-395).

4.3 Data analysis

This section provides a description of how the data from the quantitative and qualitative methods were analysed.

4.3.1 Quantitative data analysis (research question 1)

Quantitative analysis was performed on data collected from answering the first research question (what are the HIV risk perceptive of adult asylum seekers living in Finland?). The answers were analysed through following steps.

First, the data collected from the survey was registered into the statistical analysis program SPSS. Part one of the questionnaire contained eight (8) question (one question on consent and seven (7) questions on the socio-demographic characteristics). These characteristics were gender, age, marital status, level of education, length of residence in Finland, information on whether they have previously received HIV education, and lastly information on whether they have taken HIV blood test. These items were considered the independent variables. The response scale for question 1, 7 and 8 was 'Yes' or 'No'. A worded/numbered scale was used for response to question items 2, 3, 4, and 5 (See table 1 below). The author ensured that these responses included every possible answer to the questions, and they were mutually exclusive and exhaustive to avoid any overlapping. The respondents were required to answer all the questions under this section.

The author added 'Language' as an independent variable, and its variable categories were all the different languages used by the respondent to answer the questionnaire. The code used for the language variable was not based on any type of numerical scale (English=1, Finnish =2, Somali =3, Arabic =4 and Dari =5. The same applied for 'Gender' variable (Male=1, Female =2, Others = 3). An ordinal scale was allocated to the variable of 'Age', Level of education' and 'Length of stay in Finland'. These variables show an increase in value from one response unit to another; hence, an ordinal scale was more suitable. For example, the different age groups were allocated non-valued numbers in ascending progression ([18- 30years] =1, [31-45 years] =2, [46-6 years5] = 3 and from [66>years] =4). It is important to state that for previous education on HIV (question 7) and HIV blood test (question 8), a response of 'Yes '= 2 and 'No'=1 (reserve scored coding) was used. The table 1 below shows the coding used for all variables in part 1 of the survey.

Table 1. Socio-demographic characteristics and their respective coding

Nominal variables	**Ordinal variables**
Gender **(**Male) = 1 (Female) = 2 (Others) = 3 **Marital status** (Single) = 1 (Married)= 2 (Separated) = 3 (Divorced) = 4 (Widow/ Widower) =5 (In a relationship) = 6 **Previous education on HIV (reserve scored coding)** Yes) = 2 (No) =1 **HIV blood test (reserve scored coding)** (Yes) = 2 (No) =1	**Age** (18- 30years) = 1 (31-45 years) = 2 (46-65 years) = 3 (66>years) = 4 **Level of education** (Below elementary school) =1 (Elementary school) =2 (Secondary school) = 3 (High school/ vocational education) =4 (Higher education or university and above) =5 **Length of stay in Finland** (0- 1year) = 1 (1-2years) = 2 (2- 3years) = 3 (more than 3years) = 4 **Language** (English)= 1 (Finnish) = 2 (Somali) = 3 (Arabic) = 4 (Dari) = 5

Part two of the survey was to assess the respondent's knowledge on HIV (dependent variables). It contained twenty (20) questions which evaluated the subject's knowledge on susceptibility to HIV infections (questions 1-2), causation (questions 3-5), diagnosis (questions 6-7), routes of transmission (questions 8-14), risk factors, treatment and prevention measures of HIV (questions 15 -20). These items were semi-closed structured questions, and the range of responses was 'True', 'False' and 'I don't know'. For example, evaluation of the participant's knowledge on susceptibility to HIV infection

(questions 1- 2) included item questions such as 'HIV affects only people in poor countries' and 'Anyone can be infected with HIV when exposed to the virus?' (See Appendix 1).

A correct response scored 3-points, and a wrong response was scored 2-points. For a positively worded question, a response of 'True' implies a correct answer (score of 3-points). However, for a negatively worded question, a response of 'False' means a correct answer (score of 3-points). For example, questions 1, 5, 6, 12 and 19 were considered as negatively worded questions. Thus, a response of 'False' is the correct answer earning a score of 3-points. The respondents were allocated 2-points score if the answer was wrong (that is, if the response was 'True' for a negatively worded question or 'False' for a positively worded question). Response of 'I don't know' was allocated a 1-point. No coding was registered in cases where the participants did not answer the question or selected more than one answers (See table 2 below).

Part three of the survey contained fourteen (14) item questions based on the HIV risk perception, as explained by the concepts of the HBM (theoretical framework). Risk perception of HIV was evaluated with questions relating to perceived self-efficacy, feeling of vulnerability, perceived benefits, and the perceived barrier to the use of HIV prevention measure (See table 2). The Likert 5-point scale was used to categorise the responses. The response provided for questions 1 to 13 were: 'Strongly agree = 5', 'Agree = 4', 'Uncertain = 3', 'Disagree = 2', 'Strongly disagree = 1'. However, reverse scored coding was used for questions 1, 5, 6,7,8, 10, 11 and 12 (negatively worded questions) to ensure that the participants were allocated with 5-points if they strongly agreed with a positive question or strongly disagreed with a negative question. The table 2 below shows the structure of the questions and their respective coding for part 2 and 3 of the survey.

Table 2. Structure of questionnaire and response coding

	Part 2: Knowledge on HIV infection	Part 3: HIV risk perceptions
Content	Assess knowledge on HIV • susceptibility (Q. 1-2) • causation (Q. 3-5) • diagnose (Q.6-7) • routes of transmission (Q.8-14) • risk factors, treatment, and pre-vention (Q.15-20)	Assess HIV risk perception using HBM • perceived self-efficacy • feeling of vulnerability • perceived benefits • perceived barrier
Type of response scale and	Semi-closed structured 20 questions • True • False • I do not know	Likert 5 scale 14 questions (1,2,3,4,5 points respec-tively) • Strongly disagree • Disagree • Uncertain • Agree • Strongly agree • No risk • Low risk • Moderate risk • High-risk • Very high risk *Reverse scoring for negative questions
Type of coding used	• Correct answer= 3points • Wrong answer=2points • No answer/ I do not know=1point	*Positive questions:* Strongly agree = 5 points Agree = 4 points Uncertain = 3 points Disagree = 2 points Strongly disagree = 0 point *Negative questions:* Strongly agree = 0 point Agree = 1 points Uncertain = 3 points Disagree = 4 points Strongly disagree = 5 points

Dependent variable represented by question 14 (‘In your opinion, what is your level of risk of getting infected with HIV?’) was created to measure the perceived risk of HIV. This variable was labelled ‘Level of perceived HIV risk’. The rationale for setting this type of single question was to quantify recognised degree of risk for contracting HIV infection in Finland. In this case, Likert 5-points scale was used with the following

responses: ‘No risk’(1-point), ‘Low risk’ (2-points), ‘Moderate risk’ (3-points), ‘High-risk’ (4-points), ‘Very high risk (5-points). The response chosen shows the degree of the participant's perceived risk for HIV infection (Sullivan & Artino 2013).

All the survey information was registered into the SPSS program. The mean and SD of HIV risk perception, knowledge on HIV and the level of perceived HIV risk were statistically compared to determine if there was a correlation. HIV risk perception was also compared with the socio-demographic characteristics of the participants. These findings are presented in chapter 5.

4.3.2 Qualitative data analysis (research question 2)

For the qualitative part, the data analysis of the open-ended questions was conducted through Content Analysis. Content analysis is a rigorous and systematic process of data analysis to classify, summarise, measure and tabulate qualitative data. Data was analysed through the following steps: development of the codes, grouping and categorising the codes to form sub-categories and the main category (Pilot & Beck 2018 p. 282; Jansen 2010). Before transcribing data, the researcher listened to all interviews three times. Transcription was performed on Word document. During transcription, the researcher went back and forth on all the interviews transcript. After all the data was transcribed, the researcher listened to all interviews and compared them to transcribed notes to ensure no data was missed. The next step was coding the data. Codes were given to sentences and phrases based on the questions, and the participant's answers. The named code, sub-categories and categories were based on the words the participants used, HBM and the research aim and questions. Meaningful codes were then re-grouped to form sub-categories. These sub-categories were later regrouped to form the main category. Re-grouping of the sub-categories was based on their relatability with the main category and with other sub-categories. After the organisation and coding of data were completed, researcher proceeded to the presentation of the findings.

Table 3: Formation of codes, sub-categories, and main category

Main category	Sub-category	Codes
HIV education/ information needs	HIV prevention information	• No health education • No education on HIV • More education on HIV • People do not have education on HIV • More information on HIV
	Intensive HIV education	• Need more sensitisation on HIV • Aggressive sensitisation helps to raise awareness about HIV • Teach people about the dangers of unprotected sex
	Other methods of HIV education	• Use of methods of HIV education • Educate people using movies and videos on HIV • HIV prevention online activities • Young people need more interesting HIV education

The table 3 above is an illustration of the formation of one main category from the sub-categories and codes (see table 7 below for all sub-categories, categories, and main theme).

4.4 Ethical considerations

The thesis topic investigated is a sensitive one, and all ethical considerations during this project were based on the guidelines on research ethics and good scientific practice issued by the Finnish National Board on Research Integrity Guidelines (TENK) and on DIAK's ethical guidelines on Community-Based Participatory Research (CBPR). A research permit was obtained from the commissioning institution, and supervising lecturers accepted the research plan. All participants or respondents selected were recruited voluntarily. Informed consent was obtained from all the participants before the start of the survey and the interview. Research information was given to the subjects based on the voluntary nature of their participation. They were also informed about their roles in the study, the research topic, the methods of data collection, and the estimated time required to participate in the project (Finnish National Board on Research Integrity Guidelines 2019).

Confidentiality issues relating to the participants and reception centre were respected, participants were not required to use any personal identification information, and the name of the reception centre was removed from the thesis. The data collected was stored in a password protected device and was destroyed after the publication of the thesis. All participants were treated with respect, and the study results have been presented in an unbiased and respectful way. This thesis project vigorously pursues the prevention of mental or financial or social harm to all the participants. There was no conflict of interest from the researcher or the participants, which would have influenced the outcome of this research (Finnish National Board on Research Integrity Guidelines 2019).

The participants were given small incentives (snacks) as an appreciation for participation. However, the author believed that this did not violate any ethical rules as the snack was served to all potential participants and participation in the study was not a prerequisite for getting the incentives. Proper measures were taken to ensure that the participants could not benefit from their participation in the research. The rules of scientific writing were respected throughout the project. In-text references and reference list were provided (Finnish National Board on Research Integrity Guidelines 2019). This thesis was written according to the guidelines for scientific writing provided by Arcada and DIAK.

5 RESULTS AND FINDINGS

This thesis aims to understand the HIV risk perception and the needs for HIV prevention of adult asylum seekers living in Finland. The aim is achieved through two questions: 'what is the risk perception of asylum seekers?' and 'what are their needs concerning HIV prevention?'. HIV risk perception was examined using a forty (40)-items self-administered paper-based survey questionnaire analysed with SPSS. While HIV preventive needs were assessed using eight (8) face-to-face open-ended questions and data analysed through the content analysis process.

5.1 Descriptive statistics

As earlier mentioned, six (6) asylum seekers participated in face-to-face interviews (qualitative method), and one hundred and eighteen (118) questionnaires were accepted (quantitative method). The quantitative data contained two types of variables: dependent (HIV risk perception, knowledge on HIV and level of perceived HIV risk), and independent variables (the socio-demographic characteristics of the participants). Table 4 below shows the frequencies and percentages of all independent variables.

Table 4. Frequency and percentage of the independent variables

Socio-demographic characteristics	**Frequency (N=118)**	**Percentage**
Gender		
Male	107	89.9%
Female	8	6.7%
Others	3	2.5%
Age		
18- 30years	80	67.8
31- 45 years	32	26.9
46-65 years	6	5.0%
66>	0	0%
Marital status		
Single	82	68.9
Married	16	13.4%
Separated	7	5.9%
Divorced	4	3.4%
Widow/ Widower	2	1.7%
In a relationship	6	5.0%
Level of education		
Below elementary school	17	14.3%
Elementary school	23	19.3%
Secondary school	28	23.5%
High school/ vocational education	26	21.8%
Higher education or university and above	23	19.3%
Length of stay in Finland		
0 - 1year	11	9.2%
1 - 2 years	8	6.7%
2- 3 years	11	9.2%
more than 3 years	88	73.9%
Previous HIV education		
Yes	51	42.9%
No	67	56.3%
Previous HIV blood test		
Yes	41	34.5%
No	76	63.9%
Language of the questionnaire		
English	36	30.3%
Finnish	10	8.4%
Somali	11	9.2%
Arabic	30	25.2%
Dari	31	26.1%

Most of the participants in the quantitative research were male, representing about 89.9% of the sample size. Also, more than half of the participants were single with the age of 18-30years. The level of education revealed that about 14.3% had education lower than elementary school. Most of the participants (73.9%) had been living in Finland for more than three years. Only 42.9% indicated having received previous education on HIV/AIDS, and 63.9% had never taken an HIV blood test. Using SPSS, the measurement of the central tendency (mean, median) and measurement of dispersion or variations (standard deviation) of HIV risk perception was calculated. HIV risk perception was ranked 1 to 5 (1- lowest and 5-highest). HIV risk perception had the following output: Mean =3.30, Median=3.23, Standard Deviation = .511. The median and SD indicate that there is an overall positive HIV risk perception among the asylum seekers, and the dispersion of the HIV risk perception between this target population was not wide.

However, before making this assumption, a test for normality of distribution of the HIV risk perception was conducted to ensure there were no outliers affecting the central tendencies or variations. Observation of the Skewness and Kurtosis 2-values, Histogram, normal Q- Q Plots, and Box plot on the SPSS output visually indicated the data collected on HIV risk perception was approximately normally distributed. In addition, Shapiro Wilks test was conducted, and it indicated there were no statistically significant differences (Sig = .308, P-value > 0.05). Hence, the null hypothesis was accepted, and the data on HIV risk perception was assumed to be normally distributed.

5.2 HIV risk perception of adult asylum seekers in Finland

This section answers the research question "what is the HIV risk perception of adult asylum seekers in Finland?". The data collected in part three of the survey assessing HIV risk perception (question relating to perceived susceptibility, perceived self-efficacy, feeling of vulnerability, perceived benefits, and perceived barriers) was analysed using One-Way Anova test. The results are presented in percentages in table 5 below.

Table 5: Results of HIV risk perception (%), N=117

NO.	Questions	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
*1**	I think the rate of HIV infections in Finland is very low, so I do not need to practice safe sex	4.2%	14.3%	26.9%	22.7%	29.4%
2	It is possible to get infected with HIV in Finland despite the low HIV/AIDS statistics.	29.4%	43.7%	17.6%	5.9%	0.8%
3	I was worried about contracting HIV while living in my home country	9.2%	20.2%	19.3%	26.9%	21.0%
4	I feel vulnerable to contracting HIV in Finland	9.2%	21.8%	33.6%	13.4%	17.6%
*5**	I practice safe sex (e.g. use a condom) only with a new partner.	23.5%	42.0%	8.4%	13.4%	8.4%
*6**	I practice safe sex with a new partner only in the beginning of our relationship	15.1%	24.4%	16.0%	22.7%	17.6%
*7**	I often use condoms for protection against pregnancy, not for protection against HIV infection	12.6%	19.3%	13.4%	27.7%	18.5%
*8**	HIV testing is for infected persons	21.8%	20.2%	16.0%	16.8%	19.3%
9	It is important for me to know my HIV status	55.5%	25.2%	6.7%	5.9%	3.4%
*10**	I don't like using a condom because they are unpleasant to me	17.6%	18.5%	11.8%	27.7%	21.0%
*11**	I do not use condoms because my partner does not like it	12.6%	14.3%	24.4%	21.0%	20.2%
*12**	Discussions on HIV/AIDS makes me uncomfortable	15.1%	17.6%	10.9%	34.5%	17.6%
13	Receiving regular HIV education and counselling is important for preventing the infection	52.9%	28.6%	5.9%	5.0%	3.4%

***Reverse score coding used for negatively worded questions (1, 5, 6,7,8,10,11 and 12)**

Negatively worded questions (*) were reversely coded. This reverse coding ensures that all the answers represent the accurate response value. The HIV risk perception relating to susceptibility to HIV infection indicated that more than 70% of participants perceived the possibility of HIV infection in Finland notwithstanding the low incidence of HIV.

Concerning the use of a condom, more than half of the participants attest to practising safe sex with a new partner. The perception of HIV screening indicates that more than 80% of the respondents considered important to know their HIV status. Approximately one quarter of the participants indicated that their partners are creating barrier to the use of condoms. More than 80% of the participants agreed that receiving HIV/AIDS education and counselling is important for HIV prevention.

5.2.1 Correlation between HIV risk perception, knowledge on HIV and level of HIV perception risk

Before analysing the correlation between these dependent variables, the participant's knowledge and the level of perceived HIV risk were analysed. Participants demonstrated a good knowledge of HIV/AIDS (mean = 2.42, SD = .408). As earlier mentioned, another independent variable (part 3, question 14) was created by the researcher to evaluate the level of perceived risk of HIV. Analysis results of participants' responses to the question "In your opinion, what is your level of risk getting infected with HIV?" are presented in figure 3 below.

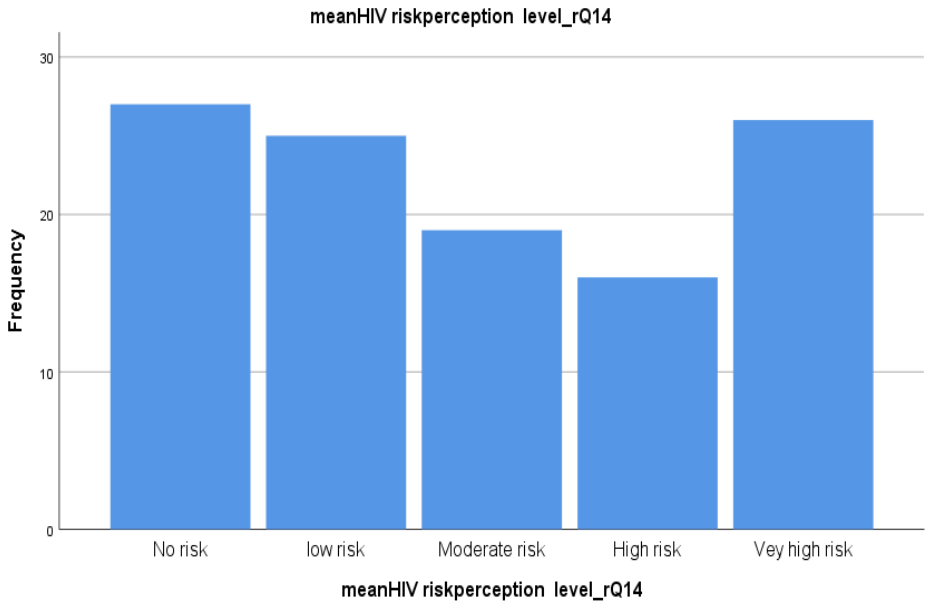

Figure 3: Distribution of the level of perceived HIV risk (N=113, 5missing)

As indicated by the histogram above, more than half of the participants (N=113, 5-missing) considered their risk for contracting HIV in Finland as 'Low'. Frequency of the responses to this question was as follows: no risk =26, low risk = 25, moderate risk = 19, high risk =16, very high risk =25 (representing 22.7%, 21%, 16%, 13.4%, and 21.8% respectively). This data shows that the number of respondents reporting having 'no risk' and 'very high risk' was almost equal.

As earlier mentioned, the Shapiro–Wilk test indicated that the data on HIV risk perception was normally distributed. Thus, the next step was to test if there was a correlation between the data collected relating to the participants HIV risk perception, knowledge on HIV and the level of perceived HIV risk. The analysis was performed using non-parametric Spearman's correlation test in SPSS and the results indicate a significant positive association between HIV risk perception and knowledge on HIV (R_s [118] = .409, p-value < .001 at the 0.01 significance level). However, there was no significant correlation detected between HIV risk perception and level of perceived HIV risk or between knowledge on HIV and level of perceived HIV risk.

5.2.2 Correlation between HIV risk perception and socio-demographic characteristics of the participants

On the other hand, the analysis to assess the correlation between HIV risk perception (dependant variable) and the socio-demographic characteristics (independent variable) was conducted using One-way Anova on the SPSS program. One-way Anova was used because the Shapiro Wilks test indicated that not all the categories under these independent variables were normally distributed. For example, the variable categories of gender were as follows: male (p-value = .0265> 0.05); female (p-value =.968 >0.05) and others (p-value = .000 <0.05). Hence, the null hypothesis was rejected, and the assumption was not normally distributed. The results of One-Way Anova test of variance showing the correlation between HIV risk perception and socio-demographic characteristics of the participants are presented in table 6 below.

Table 6: Correlation between HIV risk perception and Socio-demographic characteristics

HIV risk perception / Socio-demographic characteristics	**F-value**	**Significance probability (Sig).**	**Post Hoc test**
Gender	F=1.749	**P-value =.144**|> 0.05 *No significant correlation*	Not applicable
Age	F= 2.098	**P-value= .127**> 0.05 alpha *No statistically significant correlation*	Not applicable
Marital status	F= 0.591	**P-value = .707**> 0.05 alpha *No statistically significant correlation*	Not applicable
Educational level	F=2.843	**P- value = .027** < 0.05 alpha *Statistically significant at the 0.01level*	Below elementary & higher education Secondary school & higher education Higher education & below elementary Higher education & below elementary school Higher education & secondary school
Length of stay in Finland	F= 2.185	**P-value =.094** > 0.05alpha *No statistically significant correlation*	Not applicable
Prior education on HIV	F = 11.680	**P-value = .001**< 0.05 alpha *Statistically significant at 0.01 level*	Homogeneity of variance was violated. Not necessary to use Post hoc test as only two values under the variable: Yes or No
Taken HIV blood test	F = 4.714	**P-value = .011** < 0.05 alpha *Statistically significant at the 0.05 level*	Only two values for variable: Yes or No
Language	F = 1.749	**P-value = .144** > 0.05alpha *No statistically significant correlation*	Not applicable
Level of perceived HIV risk (Q.14)	F = 2.609	**P-value =. 040** < 0.05 alpha *Statistically significant at the 0.01 level*	Difference between: • No risk and low risk • Low risk and no risk

As indicated in table 6 above, there was no statistically significant correlation between HIV risk perception and the gender or marital status or age or length of stay in Finland or the language used during the survey. However, the analysis showed HIV risk perception of the participants had a statistically significant correlation with the participants level of education ([F=2.843], P-value = .027 < 0.05 alpha at the 0.01 level of statistical significance). A Post-Hoc test was also conducted to determine if there was a correlation between the different levels of the variable categories. Another correlation identified was between the participants HIV risk perception, their previous education of HIV/AIDS ([F = 11.680], P-value = .001< 0.05 alpha, statistically significant at 0.01 level) and previous HIV test ([F = 1.749], P-value = .011 < 0.05 alpha, statistically significant at the 0.05 level).

5.3 Needs for HIV prevention of adult asylum seekers in Finland

The aim of this thesis was also to assess the needs of HIV prevention of asylum seekers in Finland. Content analysis was used to analyse data from the eight open-ended interview questions. The analysis generated one main theme, five categories and other sub-categories. All direct quotations from the participants will be referenced as P1, P2, P3…P6 (representing all six participants in order of the interview). The main theme, categories and sub-categories are presented in table 7 below.

Table 7. Main theme, categories, and sub-categories

Main Theme	**Categories**	**Sub-categories**
Asylum seeker needs for HIV prevention	HIV education/information needs	➢ HIV prevention information ➢ Intensive HIV campaign ➢ Other methods of HIV education
	Preventive service needs	➢ Flexibility and availability of services ➢ Specialised HIV services ➢ HIV screening test services
	Needs for administrative interventions	➢ Cultural-based services ➢ Involve religious leaders in HIV programs ➢ Gender-based HIV education programs
	Personal needs	➢ Language appropriate education ➢ General education ➢ Self-service condom dispenser
	Needs related to alleviating barriers of HIV prevention use	➢ Stigma associated with HIV/AIDS ➢ Communication about sex ➢ Gender-based role of women and men ➢ Religious and Cultural beliefs ➢ Misconception ➢ Deportation and acquisition of resident permits

5.3.1 HIV education/information needs

This category had three sub-categories: need for more HIV/AIDS education, intensive HIV campaigns, and other methods of HIV education. One of the most frequently reported needs by the participants was the need for HIV education and information. When asked: "what kind of education did you receive on HIV/AIDS when you came to Finland" (question 1 of interview), it was clear that most of the participants had not received any education in Finland. Only two (2) out of six (6) participants reported having received HIV education in Finland. Those who had not received any education responded as follows: "Nothing, no education. I haven't heard about it […] I have no idea" (P6). "I have not received any education on HIV, but I was in language school" (P4). "I received information, but in Iraq not in Finland" (P5). Others reported as follows:

> Nope, I haven't., I have lived here for one year, five months and not received any education about HIV. Actually, this is the first time someone talks to me about it. I have lived here for a short while; my schedules don't allow me to participate in such HIV programs (P2).

On the other hand, the two participants who had received education on HIV/AIDS reported as follows:

> I learn more about HIV in Finland. I learn in the camp. Finland is open country, so I have education, how to use condom if I get a girlfriend. In my country, I know about HIV not because of sex but because of barbershop when I go to cut my hair (P1).

> I get information on HIV about a few months after I came to Finland, one volunteer came to talk with us [...] yeah, we get education on what to do to protect yourself, what you have to do to check the blood (P3).

Only one participant reported having received HIV education twice. The education was on the use of preventive measures (condom). " I have this HIV education two times from 2015" (P1). All the participants, except for P5, said they need more HIV education and information on how to protect themselves from HIV/AIDS.

When asked how HIV preventive services can be improved to include all asylum seekers (question 5), one participant suggested that HIV programs should consist of an intensive HIV campaign. Referring to people who are reluctant to participate in the HIV program, one participant suggested that: "show people what can happen to then if they don't protect

themselves. The situation here is, people don't know when the program is going on. You don't need to hurt peoples feelings, but we need to make more aggressive sensitisation" (P2).

Another participant felt that there was a need for more HIV sensitisation, especially for the people who do not have any HIV education in their home countries.

> I feel like because I have education in my country, I know that AIDS is important. When someone comes and say he is giving information about HIV, I want to go there because I know it is important. But other people, they don't know they have to talk to them. Maybe for me, I know the government is doing their best, but I think they need to make more education for asylum seekers (P3).

One participant also said that: "If I was in charge of this HIV prevention, I would put more efforts in sensitising people, especially about sex because most of the people are not used to talking about sex [...] break the taboo surrounding sex" (P2).

Alternative HIV education method was one of the sub-categories that came up during the interview. Some participants felt that services relating to education on HIV should not be generic. One participant recommended that education on HIV could be done through other means. "When AIDS was bad in my country, they showed movies on tv on how a person deteriorates [...] how AIDS can really eat you, yet it is preventable. They can use other activities"(P2). "Sensitise about the dangers of AIDS" (P3).

5.3.2 Preventive service needs

The nature of services on HIV was a re-occurring theme during the interviews. Three sub-categories were formed under this category: availability and flexibility of services, specialised services on HIV and need for blood testing services.

Concerning the availability and flexibility of preventive services or program, participants felt that they could not join HIV preventive education because most of such activities were provided on weekdays during working hours. Thus, one of the needs would be to have HIV intervention services that are more flexible. To this effect, one participant suggested that:

> Services should be made that they accommodate all people because I don't think it is only me; most people here work. I see people go to work in the morning and come back at night. They miss out on services just like me. I don't know, but about the availability for that group which is working from Monday to Friday, there is a game room downstairs, they can provide someone who can give a lesson on HIV on resting day within the weekends (P2).

Another type of HIV preventive service which participants wanted but felt was lacking was HIV Screening/testing. To this, one participant said: "if I want to check blood, where I can get it?" (P6). Another participant reported as follows:

> I make blood test in Lahti, two years ago. Because I was worried about if I have something, but they check and said I have nothing, so that is good. In turkey and Iraq, I check every time …six months. But now I can't; I don't know anything how to get test (P4).

One participant felt that HIV services provided at the reception centre should be different from general health care services provided by the nurse. "I think nurse here has sign on the door but good to have for HIV too because this is important. Thank you that you come here and talk to us about this thing. People don't know that it is important" (P1).

5.3.3 Needs for administrative interventions

This category had the following sub-categories: cultural-based and gender-based and involving religious leaders in the intervention programs. Asking the question "In your opinion, what can be done (by the government, reception centre) to make HIV/AIDS services and programs good for you. Two participants said they do not need anything. "I don't know…I don't need anything" (P5). "[…] I don't know anything about that" (P4). "I don't need anything…I have enough knowledge on how to protect myself" (P1).
However, others felt that making services which are gender and culturally appropriate will encourage asylum seekers to use HIV preventive services.

> I have one friend who told me that some doctor came to teach people about using condoms (laughs!), imagine using a dildo to teach people about how to put on a condom. Even though it is an effective way to teach, but people walk away, they got up and left. The situation in this country […] it is hard for Muslim women to go see a doctor because most doctors are males. Women don't want to go see doctors because they are afraid they are going to meet a doctor who is a man (P2).

Relating to this category, one participant expressed the need to consider the cultural beliefs of the asylum seekers.

> It is important to consider the personal cultural belief of people and how comfortable they can talk about sex or things like that. They need a different approach to talk about HIV to people whose culture don't allow them to talk about sex. Find out means to ease them into HIV discussion (P2).

One participant also suggested that the government should involve religious leaders in creating HIV/AIDS programs.

> These are two institutions which have to work hand-in-hand to help people talk about sex and HIV prevention. Religious people have contributed a lot to make sex in some places impossible to talk about and even in some cases hindering progress into some government initiatives. Religious leaders have a big platform through which they can educate their population on HIV. People believe their leaders, so, will believe if they tell them using a condom is important (P2).

5.3.4 Personal needs

Responding to the question 6 and 7 (relating to what health services or other services do you need to protect yourself from HIV infection/transmissions), three categories emerged: the need for general education, HIV education in the appropriate language and self-service machines for condoms. Assessing the other needs the participants may have, one participant expressed deep regret for not learning Finnish and wants to get further education.

> Education was very important because it saves lifes, but I don't think all other asylum people thing that education on HIV is beneficial to them. People don't like to know, people work shifts, tired and don't have patients to listen to HIV talk. When I came to Finland, I was stupid because I thought Finnish language can only be used in Finland, so I did not learn. So now, I am thinking if I get a resident permit now, what I am going to do because I can not find a job or go to school because my English is not that good(P1).

Concerning the provision of HIV education in the language that the asylum seeker can understand, one participant mentioned that it is difficult to go to HIV sensitisation activities because they are in Finnish language and he does not understand or speak Finnish. "In this place, we use to have something like that, but they speak in Finnish, and I don't understand what they are saying because I don't know Finnish, that is the problem" (P6).

Only one participant reported the need for self-service condom dispenser at the reception centre. "I know people want to use condoms, but sometimes they are not comfortable to go buy a condom. Where I come from, they put like boxes in the restroom and fill it with condoms. They should be doing something like that here" (P2).

5.3.5 Needs related to alleviate barriers of HIV prevention use

To understand some of the challenges that the participants may be facing in using HIV prevention services, question 8 was asked: 'what factors could prevent you from using HIV measures?'. Almost all the participants gave their opinion about the subject except P5. These were: HIV/AIDS-related stigma, lacking the confidence to communicate about HIV, gender roles prevalent in the country of origin, religious beliefs, misconception about HIV/AIDS, and worries about deportation. Expressing the challenge to the use of HIV prevention due to stigma, one participant said: "I don't think people don't want to use protection…it's not about the HIV, I think it is about the way it is transmitted. People don't want to talk about anything related to sex" (P2).

Lack of communication on HIV/AIDS was also a barrier mentioned during the interview.

> I think we need to help asylum seekers to be comfortable talking about sex because they can't talk about it, how can they talk about sex education and HIV prevention?. Most of the asylum seekers here come from these cultures where it is a taboo to talk about something like that. So it is hard for most of them to go and buy a condom, so how do you simplify that for them (P2)?

During the interviews, some participants told that cultural and religious beliefs might be a barrier to the use of HIV preventive measures. One participant said:

> Religion forbids people from talking about sex and using protection. Where I come from you can't even mention body parts when you are talking about somethings. The police may arrest you if you say something like that in public. It is hard in that culture to talk about the dangers of HIV (P2).

Another point which came up during the interview was worry about getting a resident permit or being deported back to their countries. Many participants expressed fear of being deported to their home countries. According to some of the participants, this issue was more important to him than HIV prevention.

> Deportation is more important than HIV. Why people don't care is because they have a bigger problem. For me, if you have HIV, you can still live, but if you go back to Afghanistan, then you can die. You know people in Syria, Afghanistan, you may die one day, but here you die every day when Finland government put news that we are going to deport Afghanistan refugees, then we don't know what happens for us here (P1).

Two participants felt that the gender role of women make it difficult to use a condom. "Women feel intimidated to ask a man to use a condom because they are afraid of what

he would say. Only a man can use a condom" (P3). Referring to the reaction of men when a woman requests for a condom to be used during intercourse, one participant said: "oh, she is a player!" (P2). These types of gender roles affect the use of condoms by some women.

Religious beliefs were also reported as barriers affecting the use of HIV preventive measures. "I am a Muslim; I don't use condom, I think condom is difficult and stupid thing, maybe someday I use it" (P4). "It is not for me" (P5). "If I have a wife, I think there is no need to use condom because she is my wife" (P6).

> "[…] the government is pushing young people to use birth control, but churches are stopping people from going to health centres to get condoms because they are claiming that people should not have premarital sex. Religious institutions are contributing a lot to the prevalence of AIDS because of the message that they give to people. I don't like the part of abstinence because I think it is impossible to do it (P2).

Misconception relating to condoms and perceived susceptibility of contracting HIV in Finland was one of the barriers reported during the interviews. "[…] People think that condom smells and it is hard to use". "People risk having HIV than to use a condom because it smells bad" I know condom cannot protect you from pregnancy, but I use all the time" (P2).

Moreover, the misconception that there is no AIDS in Finland was reported by one participant. "Unfortunately, I think people don't want to use a condom because they think there is no AIDS in Europe. I think it's not true". Even though the percentage of HIV is low but imagine you meet just that one person who has it? (P2).

6 DISCUSSION

This thesis aims to understand HIV risk perception and the needs for HIV prevention of adult asylum seekers living in Finland. The objective is to re-enforce the focus on HIV risk awareness and to promote the optimal use of HIV preventive measures by adult asylum seekers. It also intends to add to the limited evidence-based knowledge on HIV risk perceptions and HIV prevention needs of asylum seekers in Finland. The author believes that the research questions have been answered as both the qualitative and quantitative analysis have indicated the HIV prevention needs and the HIV risk perception of asylum seekers (respectively). Hence, the study aim was achieved.

6.1 Discussion on survey results

As earlier stated, this mixed research provided evidence that the asylum seekers in this study had a positive HIV risk perception. The participant's HIV risk perception were clustered around the average score as per the outcome of SD, and there were no substantial outlier scores which affected the results. Thus, the HIV risk perception amongst this target group did not significantly vary from one person to another.

Evaluation of the knowledge of the participants indicated there was good awareness of HIV/AIDS. The results showed a positive association between HIV risk perception and knowledge of HIV at the 0.01 significance level, which indicates the association did not occur by chance. The positive correlation indicates as the knowledge of HIV increases, the HIV risk perception also increases. Thus, knowledge of HIV prevention is an important aspect of vulnerability to the infection. This study result differs from results of Tiittala et al. (2018c), which indicated significant gaps in knowledge on HIV/AIDS amongst young asylum seekers as compared to the other population. However, Tiittala et al. (2018), also stated that insufficient knowledge of HIV increases vulnerability to the disease. Hence, the author feels that the need for more education and information on HIV prevention should be taken into consideration when creating HIV intervention programs for asylum seekers.

Question 14 (part 3 of the survey) seeks to understand the participants level of perceived HIV risk, and 52% of the respondents reported 'No' to 'Low' risk of contracting HIV in

Finland. Low HIV risk perception has been associated with people who are taking risky health behaviours (For example, not using a condom). According to the HBM, people do not only need to be aware of an existing risk of HIV/AIDS, but they also need to feel vulnerable to such risks in order to take protective actions. Asylum seekers in this study may not see the need to use protective measures against HIV/AIDS, as more than half of the participants reported a low risk of contracting HIV in Finland. Hence, they are more likely to engage in activities which may lead to an even higher risk of exposure/transmission of the disease. Contrarily, in Tafazoli et al. (2016 p.583), it was stated that high perceived risk is a predictor of risky behaviours which may increase person's vulnerability to HIV/AIDS. Such contradictory viewpoints necessitate more investigation into HIV risk perception.

As shown in section 5.2 above, the HIV risk perception of asylum seekers was analysed in the context of their socio-demographic characteristic reported during the survey. Using the non-parametric test of the Spearman correlation test, all the socio-demographic variables were normally distributed except for gender. The number of males was proportionally higher (89.9% of the sample size) than the other gender categories. The author wonders if the results would be the same if there were an approximately equal number of participants from all gender groups.

As expected, there was a statistically significant association between the level of general education and HIV risk perception. Studies have shown that the level of education can influence person's risk perception. However, there was fluctuation in the level of HIV risk perception between people who had no education and those with secondary school education. The plot of this relation using the SPSS showed a sharp drop from elementary education (slightly high HIV risk perception) to secondary education (lower HIV risk perception), then a sharp rise to high-risk perception in people with high school education. The highest HIV risk perception was common among participants with higher/ University education. Thus, this result indicates that people with higher education have a higher HIV risk perception compared to people with low education. Other research supports this thesis result; for example, Kiviniemi et al. (2018) stated that low levels of education are associated with low knowledge on health risk. People with higher education can gain HIV knowledge more easily than those with no education. Lack of information and education may lead to low levels of HIV risk perceptions in asylum seekers. This thesis result also

aligns with its theoretical framework (HBM), which hypothesizes that health-seeking behaviour is influenced by a person's perception of a threat posed by a health problem (La Morte 2018; Boskey 2019). Other studies also show that education increases healthy habits can be exposed to the dangers of risky health behaviours through. Continuous education on HIV/AIDS is important as it increases HIV risk perception. High HIV risk perception reduces tendencies of engaging in risky behaviours - hence prevent the spread of HIV (Essien et al. 2007; You 2011).

No statistically significant correlation between the participants marital status and HIV risk perception was found. Studies, however, suggest that the perception of one's susceptibility to HIV can be affected by marital status. Married people are less likely to use condom as protection against HIV (Mtenga et al. 2016; Nasrullah et al. 2017).

One surprising result was that no statistically significant association between HIV risk perception and the duration of residence in Finland was observed. The author wonders if the same output would have been obtained if the host country (Finland) had higher prevalence of HIV/AIDS. The author also feels that this result could have been different if more participants had lived in Finland for less than three years (most participants indicated reported more than three years of residency in Finland). More research is needed to verify if living in HIV prevalence zone affects HIV risk perception. Finland has a very low rate of HIV infections, and in Nikula et al. (2007) showed that young people use condoms not for prevention against HIV but rather as a birth control method. It is possible that living in a country where HIV prevalence is very low can encourage the non-use of condoms during sexual activities.

The results also indicate a correlation between participants previous HIV testing and HIV risk perception. Similarly, the results also reveal a strong positive association between perceived risk of HIV/AIDS and previous education on HIV. These results confirm the expectations of the author and the results of other studies. Low use of HIV screening services in the general population may be associated with a low HIV risk perception (Aluzimbi et al. 2017). These results also align with other studies such as in Kabwama & Berg-Beckhoff where it was concluded that "the association between HIV/AIDS knowledge and risk perception might follow a continuum from positive to no association and finally to negative" (2015).

The researcher also decided to test the association between the respondent's HIV risk perception and the survey language used. As seen in the data collection, the survey was available in five languages: Arabic, Dari, English, Finnish and Somali. The analysis did not show any statistically significant correlation between these language categories and HIV risk perception. This output was a pleasant one as such results may be a disingenuous representation of groups of people and may foster stereotypes and stigma against them. Also, it is important to say that the language used by the respondents was not necessarily their mother tongue; it was the best available language that they could understand. For example, some participants whose mother tongue was Persian or Turkish but could understand Dari or Arabic took the survey in those languages.

6.2 Discussion on face-to-face interviews

Almost all participants reported the need for more information and education on HIV. Some of the participants felt that there is a need for intensive HIV interventions to make asylum seekers more aware of the HIV problem. The participants proposed the use of other methods of HIV education which are more captivating to the target group. Previous studies support this finding; for example, in Faust & Yaya (2018), it was concluded that peer-education interventions seem to be more effective in facilitating the acquisition of HIV-related knowledge, especially on HIV transmission routes. There is a need for an alternative method of HIV education to motivate people to participate. People are tired of getting boring lessons on HIV/AIDS; programs for especially young people should include fun activities and interaction among peer groups. Also, the author feels that educational activities for asylum seekers should be organized online or through visual learning platforms. The anonymity of such educational programs can encourage participation.

Another category of needs which was discussed during the in-depth face-to-face interview was the nature of preventive services. The participants talked about the need for services to be flexible to accommodate asylum seekers who could not participate in any intervention because of their working schedules. As suggested in the previous paragraph, interventions could be online-based and anonymous. These types of interventions will help people to participate in HIV preventive programs whenever possible. In Nguyen et

al. (2019), eHealth interventions on HIV prevention showed a decrease in reported risk behaviours. Innovative on-line intervention such as on-line social networking interventions, smartphones application, the use of HIV educational live chat and chat room activities have been considered promising tools in decreasing sexual risk-taking and promoting HIV preventive behaviours. Even though these types of interventions were tested in groups like men who have sex with men (MSM), the author thinks that they can still apply to the target group of this study.

Concerning the administrative interventive needs category, other research supports the need of cultural and gender-based interventions and the involvement of religious leaders in HIV prevention. The previous literature confirms this finding as it was stated in Fakoya et al. (2015) that resources allocated to primary preventive health care should be directed towards intervention programs that are culturally appropriate for immigrants (including asylum seekers). Studies such as Anugwom &Anugwom (2016) and Iwelunmor (2014), show that cultural and gender-based interventions, as well as those organised through religious institutions created for a specific population, are usually more utilized compared to other types of interventions. Hence, reducing vulnerability to the infection for asylum seekers implies creating culturally appropriate interventions and programs.

Barriers to the use of HIV preventive measure was one of the main categories presented in qualitative findings. HIV/AIDS-related stigmatisation and discrimination may lead to denial of entry or refusal to renew residence permits. Misconception about the use of condoms and the cultural and religious beliefs are well-known factors which may impede asylum seekers ability to access HIV prevention services and discourage them from seeking HIV/AIDS-related counselling and treatment support. As previously stated by Tangmunkongvorakul et al. (2017), barriers to the use of HIV preventive measures resulting from misconceptions about condoms may affect person's sexual behaviours and lifestyle.

Gender roles are a barrier to the use of preventive measures, especially for women in societies where cultural beliefs and traditional practices amplify the gap between men and women. These findings indicated that the man is considered as the partner who decides whether to use a condom or not. Women are forbidden to ask a man to use a condom. This finding is supported by another research. In Warren (2018), female participants reported having a risk of losing their lovers if they ask the men to use protection. Also,

some women in this study acknowledged that they demand a man to wear a condom only when they are angry for something or when there is suspicion of unfaithfulness. These types of gender roles can act as severe barriers to women's independence to take HIV protection action, thus being a serious threat to exposure to HIV/AIDS infection. The findings on gender roles reported by the participants in the interview concur with other studies which show that men have greater social power over women in the use of HIV preventive measures (Warren 2018).

One of the most important implicit and explicit needs reported by the participants as a possible barrier to HIV prevention use was their emotional needs. The fear of deportation is a negative emotion that could influence a pessimistic view of HIV exposure risk. The Finnish Institution for Health and Welfare (THL) also acknowledges this concern for asylum seekers. According to the THL, "asylum seekers' well-being might also be threatened by factors such as the long asylum process, worry about their families and loved ones, and discrimination experienced in the new country" (THL, 2020). It was also stated in Ferre & Klein that: "individuals higher in dispositional optimism who have optimistic risk perception regarding a looming threat may be more likely to minimize the threats severity and less likely to seek additional health information" (2015). The HBM concept acknowledges this point as it articulates that the risk and benefits are positively correlated. Unfortunately, there are instances when these risk and benefits can also be negatively correlated in people's thinking and decision-making processes.

It is important to mention that the participants in this study reported low use of HIV intervention services, making it challenging to determine what they think about such services. Nevertheless, they expressed both explicitly and implicitly, gratitude and appreciation for the current services they are using. There was a general feeling of no need for the services as per their responses. However, most of the participants knew such services would be provided to them whenever needed.

According to the National Development Project (TERTTU) relating to services of asylum seekers, all asylum seekers are provided with voluntary initial examination when they arrive in Finland. These examinations include, for example, screening for infectious diseases (such as HIV/AIDS). Public health nurses in the reception centres are usually in

charge of making referrals for HIV screening for asylum seekers based on the outcome of their risk assessment (THL 2020).

6.3 Reliability and Validity

Validity in a quantitative study is the ability for an instrument to assess the outcome of the measurement. There are three types of validity in quantitative research (face and content, concurrent and predictive, and construct validity). Reliability in a quantitative study refers to how predictable, and accurate a research instrument is, if the ability to produce is consistent and accurate measurements can be applied in real-life situations (Kumar, 2011 pp. 178-185). The questionnaires were drafted based on the thesis aim, research questions and the theoretical framework. All the data collected was comprehensively analysed using the SPSS program. As seen in results (section 5.3), there was a moderate correlation between HIV risk perception and knowledge of HIV, and as per the outcome, it is safe to say that there is a less probability that this correlation occurred by chance. The correlation between these two dependent variables also proves that the data was collected properly, and it was a random sample.

However, it is important to state that non-probability sampling research results, specifically from convenience sampling, should not be considered as correct representation of the population. This is due to convenience sampling seeks to recruit the participants based on their availability and not how accurately they represent the entire target population of the research (Bhat 2020). Thus, the results and findings of this thesis cannot be generalized to all asylum seekers in Finland.

The trustworthiness of research is measured by its credibility, transferability, dependability, confirmability, and authenticity (Boswell & Cannon 2017 p. 145). Credibility ensures the real value of data and its analysis. The researcher conducted the thesis according to the guidelines of the Finnish advisory board on research integrity and followed the guidelines for scientific writing provided by Arcada and DIAK. All participants were asked the same questions and given the same opportunity to present their views. The interviewer refrained from influencing the participant's responses in any way or inappropriately interpret them. All the information from the interview was recorded without bias.

Precautions were taken to ensure that the data collection is accurate and consistent (Gerrish & Lathlean 2015 p. 398).

Transferability, which is the ability to apply results to similar populations, is achieved in this study by extensively describing this population and similar groups such as the refugee and migrants in the background section. The findings of this thesis are transferable to these other groups as indicated by many studies which use interchanging terms. Dependability refers to the ability to get similar findings if another researcher follows the same research methodology (Boswell & Cannon 2017 pp. 145-146; Kumar 2011 pp. 184-186). The aim, objective and research questions are clear and easy to understand. Furthermore, the author has provided extensive documentation of all the methods of data sampling, collection, analysis, and interpretation which can enable another researcher to follow this methodology and to obtain similar results.

Confirmability refers to neutrality in the research process. The researcher remained unbiased throughout the project and reported the results of the study without personal bias, assumptions, and own perceptions. Authenticity refers to the use of reasonable methodological rigour in research. The use of mixed method achieves authenticity. One of the advantages of a mixed-research method is that; it employs rigorous research methodology that provides strength to minimize the weakness of using only a quantitative or qualitative method (Boswell & Cannon 2017 pp. 145-146; Kumar, 2011 pp. 184-186). All the findings and results presented in this thesis are a true representation of the data collected during the survey and interviews, the opinion of the author was stated only in the discussion.

6.4 Limitations of the study

A mixed research method requires much work even for experts in the field. Because this survey questionnaire is a self- administered survey, there was a need for a pilot study to pre-test the questions before the main study. Piloting is very important as it helps to estimate how long it will take to complete the survey and helps the researcher to ascertain if some items are unambiguous or offensive to the participants (Gerrish & Lathlean 2015 p. 422). Unfortunately, the researcher could not do a pilot study due to time constraints and

the complexity of finding a suitable target group. Also, the sensitivity of the topic made it impossible to recruit people for the pilot study. However, the research questions were read and approved by the supervising lecturers and staff at the reception centre. Corrections to the questionnaire and interview questions were made based on the feedback received.

The qualitative part of the study might present some challenges, especially in data collection and analysis. It is recommended that two researchers should conduct a focused interview (one acting as a moderator and the other as the interviewer recording the interview). The researcher was aware of the errors which might occur in the collection of data. To minimise these possible errors, researcher recorded all the interviews.

Another limitation of this study relates to the fact that more than half of the participants in the face-to-face interview did not know or had not used HIV prevention services. Thus, it was challenging to get the same quality and quantity of information from the participants. The author feels that maybe more inclusion criteria could have been set so that only people who had used such services could participate in the interview. However, this option was unfeasible as it was not realistic given the recruitment situation of the participants. The author feels that if participants would have been asked in advance about the use of HIV prevention services, it would not have been appropriate and may have scared some people from participating in the interview.

Another limitation of this study worth mentioning is that, even though the participants in the survey were informed about the nature of the survey (self-administered), some participants still needed help to understand some of the questions, while others asked help from a friend. In such instances, the researcher reminded the participants to answer the question based only on his or her own opinion. It was impossible to ascertain if the person helping the participants influenced the answers. The researcher excluded four questionnaires from the analysis based on these grounds to ensure the validity and reliability of the results.

7 CONCLUSIONS

The results of this thesis answered the research questions. Hence, the aim of the thesis was achieved. Quantitative analysis results indicate an overall positive HIV risk perception and good knowledge of HIV, the variables were significantly and moderately positively correlated. More than half of the participants reported a low level of risk of contracting HIV in Finland.

Similarly, there was a statistically significant correlation between HIV risk perception and the level of education. Data analysis also indicated statistically significant association between the participants HIV risk perception and previous education on HIV/AIDS and previous HIV testing. However, the results show no association between HIV risk perception and gender, age, duration of residency in Finland, marital status, and survey language.

From the qualitative analysis, five (5) categories of needs for HIV prevention were reported during the interview. These include HIV education and information needs (HIV prevention, intensive HIV campaigns and other methods of HIV education), and preventive service needs (flexibility and availability of services, specialized HIV services and HIV screening services). Administrative intervention needs include services and programs which are gender-based, as well as religiously and culturally appropriate. On the other hand, personal needs consist of the need for formal education, Finnish language skills and self-service condom dispenser. Furthermore, the need to alleviate barriers to the use of HIV preventive intervention use include aspects such as HIV-related stigma, lack of communication about sex, misconceptions about AIDS and condom use, gender roles, emotional stress resulting from fear of deportation. The qualitative findings also indicated that only two out of the six participants had received HIV education in Finland, and only one reported having used HIV screening services. Most of the participants had not heard of such services before, even though the reception centre was providing them.

These results and findings are, for the most part, supported by the HBM and previous studies on the topic. The common theme is that HIV risk perception is a crucial factor which determines the use of HIV preventive measures. The HBM postulates that low HIV

risk perception in the population may lead to low uptake of preventive services and less preventive actions and more risky health behaviours.

In conclusion, the results of the quantitative research reflected the findings from qualitative research. For example, the quantitative results show that more than 80% of the participants reported it was important to have HIV/AIDS education and to know their HIV status. While in the qualitative findings, the needs for HIV education/information, and HIV screening services were some of the most reported needs during the interviews.

This thesis also concludes that public and private institutions, especially those in charge of creating HIV interventions for asylum seekers, should understand their risk perceptions and influencing factors. The author believes that the success of public health HIV intervention programs for asylum seekers is largely dependent on their HIV risk perception. Assessment of the HIV risk perception of asylum seekers helps to understand how they evaluate their risk of contracting HIV, which is a crucial determinant of protective behavioural actions. Effective use of HIV preventive interventions increases the asylum seekers' overall prevention against HIV/AIDS infections and transmission; these aspects go a long way to reduce the global burden of HIV/AIDS.

The author recommends that more research is needed to investigate factors that affect asylum seekers HIV risk perceptions and how the HIV risk perception of asylum seekers can be changed to have a more positive effect on their protective behaviours. More research is also needed to assess the needs for HIV prevention of adult asylum seekers in Finland.

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APPENDICES

Appendix 1 Survey Questionnaire and Consent Form

Survey Questionnaire

Name of the research: Babeh Ebai (email: xx, tel: xx)
Name of educational institution: Arcada, Diak University of Applied Sciences and Baraton University, Master's degree in Global Healthcare.
Commissioned by: Reception Centre X -Finland.
Master thesis topic: HIV Risk Perception and Prevention among Adult Asylum Seekers in Finland

Thank You for Your participation in this survey.

HIV/AIDS is one of the major health crises faced by people all over the world. This topic is very important as the World Health Organisation statistics on HIV/AIDs indicates that despite global efforts which have been put in place to fight against the HIV/AIDS pandemic, about 1.8 million people in the world became infected with the disease in 2017. This clearly indicates that the fight against HIV is still far from over and much needs to be done especially in the area of research. Re-enforcing people's awareness of HIV infection is essential for adequate protection against the disease. The purpose of this questionnaire is to understand Your perceived risk of contracting HIV infection and provide You with knowledge on effective HIV prevention measures. This survey also aims to understand Your needs related to HIV prevention. The results of this survey may help in the development of HIV prevention services and programs that are culturally and religiously appropriate for asylum seekers in Finland.

This is an anonymous self-administered survey. Please DO NOT write your name or any personal identification information on this survey. This survey will take approximately 20 minutes to complete. Please, kindly answer all the three parts of this questionnaire to help us understand Your responses better. However, you are free to discontinue at any time if needed. All the information You provide here will be treated with confidentiality as stipulated under research agreement signed with reception centre X.
Please read each question carefully and select the best option, which represents Your correct choice. Please answer all questions.

Part One: Consent and characteristics of participants

1. I hereby give my **consent** to participate in the study 'HIV/ AIDS-related Risk Perception Assessment Survey'.

☐ Yes

☐ No

2. **Gender**

☐ Male

☐ Female

☐ Others

3. **Age**

☐ 18- 30

☐ 31-45

☐ 46-65

☐ 66>

4. **Marital Status**

☐ Single

☐ Married

☐ Separated

☐ Divorced

☐ Widow/ widower

☐ In a relationship

5. **Educational Level**

□ Below elementary school

□ Elementary school

□ Secondary school (middle school)

□ High school/ Vocational education

□ Higher education or University and above

6. **Length of stay in Finland**

□ 0-1year

□ 1-2years

□ 2-3years

□ More than 3 years

7. **Have you ever received HIV education and counselling in your home country or in Finland**?

□ Yes

□ No

8. **Have you ever taken an HIV blood test?**

□ Yes

□ No

Part Two: Knowledge on HIV infection

Please read carefully and **select only one answer for each question** ('True' or 'False' or 'I don't know').

Please, kindly answer **ALL** the questions.

Questions	True	False	I don't know
1. HIV affects only people in poor countries	☐	☐	☐
2. Anyone can be infected with HIV when exposed to the virus.	☐	☐	☐
3. HIV is a chronic disease infection which can only be managed and not treated?	☐	☐	☐
4. AIDS is caused by HIV	☐	☐	☐
5. HIV and AIDS are the same things	☐	☐	☐
6. A healthy-looking person cannot be HIV positive.	☐	☐	☐
7. HIV blood testing is the only way to know one's HIV status	☐	☐	☐
8. HIV can be transmitted through unprotected sexual contact with an infected person	☐	☐	☐
9. HIV can be transmitted through other means such as exchange of body fluids (e.g. semen, vaginal fluids, breast milk) from an infected person to a non-infected person	☐	☐	☐
10. HIV be transmitted through sharing sharp objects, e.g. needles with an infected person	☐	☐	☐
11. It is possible to get HIV through piercing, using public shaving machine at the barber's shop or through tattooing with contaminated instruments.	☐	☐	☐
12. Eating healthy and exercising regularly can prevent a person from contracting HIV	☐	☐	☐
13. HIV can be transmitted from a mother to a child during pregnancy or breastfeeding	☐	☐	☐
14. Having sex with more than one partner at a time increases a person's chances of becoming infected with HIV.	☐	☐	☐

Questions	True	False	I don't know
15. Alcohol and drug abuse can affect a person's judgement and lead to sexual behaviours that put them at risk of contracting HIV.	☐	☐	☐
16. HIV cannot be prevented through vaccination	☐	☐	☐
17. The risk of HIV can be reduced when new partners get HIV testing before sexual intimacy.	☐	☐	☐
18. The risk of getting infected with HIV can be lowered by using condoms regularly and correctly during sexual activities.	☐	☐	☐
19. Condoms are 100% effective in preventing HIV infections.	☐	☐	☐
20. Abstinence (not having sex) is the best method of protection against HIV/AIDS.	☐	☐	☐

Part Three: Perception of the risk of acquiring HIV

The following questions shall evaluate the participant's HIV risk perception.

Please carefully read questions and **honestly choose only one** answer, which represents your view. Please answer **ALL** the questions.

1. I think the rate of HIV infections in Finland is very low, so I do not need to practice safe sex

   Strongly agree Agree Uncertain Disagree Strongly disagree

2. It is possible to get infected with HIV in Finland despite the low HIV/AIDS statistics.

   Strongly agree Agree Uncertain Disagree Strongly disagree.

3. I was worried about contracting HIV while living in my home country

   Strongly agree Agree Uncertain Disagree Strongly disagree.

4. I feel vulnerable to contracting HIV in Finland

   Strongly agree Agree Uncertain Disagree Strongly disagree

5. I practice safe sex (e.g. use a condom) **only** with a new partner.

   Strongly agree Agree Uncertain Disagree Strongly disagree

6. I practice safe sex with a new partner only in the beginning of our relationship

   Strongly agree Agree Uncertain Disagree Strongly disagree

7. I often use condoms for protection against pregnancy, not for protection against HIV infection

   Strongly agree Agree Uncertain Disagree Strongly disagree

8. HIV testing is for infected persons

Strongly agree Agree Uncertain Disagree Strongly disagree

9. It is important for me to know my HIV status

Strongly agree Agree Uncertain Disagree Strongly disagree

10. I don't like using a condom because they are unpleasant to me

Strongly agree Agree Uncertain Disagree Strongly disagree

11. I don't use condoms because my partner does not like it

Strongly agree Agree Uncertain Disagree Strongly disagree

12. Discussions on HIV/AIDS makes me uncomfortable

Strongly agree Agree Uncertain Disagree Strongly disagree

13. Receiving regular HIV education and counselling is important for preventing the infection

Strongly agree Agree Uncertain Disagree Strongly disagree

14. In your opinion, what is your level of risk of getting infected with HIV?

Very high-risk High-risk Moderate risk Low risk No risk

Thank You very much for answering this survey!

You may contact the researcher regarding any questions concerning this survey through the contact information listed above.

Appendix 2 Face-to-Face Interview Questions

1. What kind of education did you receive on HIV/AIDS when you came to Finland?
2. What kind of HIV/AIDS prevention services have you used during your stay in Finland?
3. What other services do you know but have not used?
4. How were the services or programs good for you?
5. In your opinion, how can these services and programs be improved?
6. What do you need in terms of health services to protect yourself against HIV infection?
7. Apart from healthcare services, what other things do you in need to prevent yourself from HIV transmission?
8. What factors could prevent you from using HIV preventive measures?

Appendix 3 Letter of Information/Consent for Interviews

Letter of Information/Consent

Name of the research: Babeh Ebai (email: xxxx, mobile: xxxx)
Name of educational institution: Arcada, Diak University of Applied Sciences and Baraton University, Master's degree in Global Healthcare.
Commissioned by: Reception Centre X -Finland.
Master thesis topic: HIV Risk Perception of Adult Asylum Seekers in Finland

This letter contains information concerning participation in an individual face-to-face interview for research on 'HIV Risk Perception of Adult Asylum Seekers in Finland'. The researcher has an educational background in Nursing and Elderly Care and is currently studying a master's degree programme in Global healthcare. This thesis is commissioned by reception centre X.

Purpose of the interview

The aim of this thesis project is to understand the HIV risk perception of asylum seekers and to determine their needs relating to HIV prevention. For the face-to-face interview, the goal is to get your opinion on your needs concerning HIV preventive measure.

Research Intervention (individual face-to-face interview)

You have been invited to participate in the research because of your opinion as an asylum seeker matters, especially in the matter relating to assessing the needs of asylum seekers in Finland. The interview will be an individual face-to-face discussion between you and the researcher and shall be conducted in the English language. Basic skills in English is sufficient for participation in this interview session. The length of the interview is approximately an hour. The interview shall take place at the X facility on a planned date.

The procedure of the interview

The researcher, with the help of reception centre staff, will inform the participants of the date and time of the interview. The participants will be given the information letter and the consent form before the interviews. Please, carefully read the information and ask questions about the study. Please, kindly sign and return the consent form to the researcher before the start of the interview. The interview questions shall be provided to the participants on an A4 sheet paper just before the start of the interview. One question will be asked at a time, and each participant will be given the same amount of time to answers the questions.

Anonymity and confidentiality

Participation is voluntary and anonymous, no personal information (for example, names) will be used during the sessions. The researcher shall record the interview using a digital audio recorder (using the phone) on at least two devices. The interviews shall also be transcribed on a notebook. All the information collected during the interview shall be stored on a password protected memory device and will be destroyed after the publication of the thesis. The information you provide will constitute the results of this research and will be published in the development report/research article/ further development work for the project.

Contact information

Please, feel free to contact the researcher for any questions related to this study. The contact information is provided above.

Certificate of consent

I have read the information letter, and I was given the opportunity to ask questions about it. I am satisfied with the information provided, and I consent voluntarily to participate in this study.

- □ **Yes**
- □ **No**

Date:

Place:

Statement by the researcher or person collecting consent forms

I confirm that the participant has voluntarily consented to participate in this study

- □ Yes
- □ No

Name of researcher/ person taking the consent

Signature of research/ person taking the consent

Date:

Place:

Appendix 4 Motivation letter for the research project

Doris Babeh Puttonen Ebai
Arcada/ DIAK University of Applied Science
Email: xx
Supervisors: Heikki Paakkonen and Arja Koski

Contact persons: XX
22.02.2019

Motivation letter

I humbly wish to request for collaboration with X reception centre as a working-life partner on my thesis project. Currently, I am pursuing a master's degree programme in Global Healthcare offered by Arcada University of Applied Science, DIAK and the University of Eastern Africa Baraton (Kenya). My thesis topic is 'HIV Risk Perception of Adult Asylum Seekers in Finland'. My main interest is to re-enforce HIV risk awareness, especially among adult asylum seekers in Finland. This topic is very important as there is an insufficient amount of evidence-based knowledge on HIV prevention among asylum seekers. Also, new research conducted in Finland in 2018 indicated there are important gaps in the knowledge of HIV among young asylum seekers living in Finland. These gaps in the knowledge HIV put them at a high risk of contracting or transmission of HIV/AIDS. The aim of this thesis project is to understand the HIV risk perception of asylum seekers and to determine their needs relating to HIV prevention.

A mixed-research methodology will be used for this thesis. All the participants will be recruited through reception centre X and with the help of the staff. The quantitative method of this thesis shall consist of a paper-based and/or online-based survey questionnaires (100-300 respondents), whilst the qualitative method shall use individual face-to-face interviews (5-10 participants) to collect data. The questionnaire survey will be available in five languages English, Dari, Somali, Arabic and Finnish. However, face-to-face interviews will be conducted only in English. Satisfactory English skills are needed for participation in the face-to-face interview.

All participants to be selected as informants or subjects for this project will be recruited voluntarily and anonymously. Informed consent shall be obtained from all the

participants before the start of the survey and individual interviews. Participants are free to withdraw their consent at any time. The interview sessions will be recorded and transcribed. No personal information shall be collected (except for information related to the age, gender, level of education, marital status, length of residence in Finland and their previous education on HIV/AIDS). Data collected is not subject to third party sharing except to the supervising lecturers for the purpose of evaluation of the thesis. Data collected will be stored in a password protected device, and all materials will be destroyed after the completion of the projection. According to the schedule planned, this project is intended to be completed and published by mid- November 2019. The thesis publication can be found on the 'Theseus.fi.' website. All the processes undertaken in this project are based on the guidelines on research ethics and good scientific practice issued by the Finnish National Advisory Board on Research Ethics and on DIAK's ethical guidelines on Community-Based Participatory Research (CBPR).

In case of any further questions related to this research, please kindly contact my supervisors or me through our personal information provided above. I look forward to starting this project with your organisation.

Yours sincerely,

Babeh

Appendix 4 List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centre for Disease Control
ECDC	European Centre for Disease Prevention and Control
EEA	European Economic Area
EEU	European Economic Union
EFTA	European Free Trade Association
EU	European Union
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
MSAH	Ministry of Social Affairs and Health
Rs	Spearman's Rank Correlation Coefficient
SD	Standard Deviation
SIG.	Significance Probability
THL	Terveyden ja Hyvinvoinnin Laitos (Finnish Institute of Health and Welfare)
WHO	World Health Organisation